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PREPARATION FOR THE 1990 FARM BILL

HEARINGS

BEFORE THE

SUBCOMMITTEE ON AGRICULTURAL RESEARCH
AND GENERAL LEGISLATION

OF THE

COMMITTEE ON AGRICULTURE,
NUTRITION, AND FORESTRY
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

ON

ENHANCING THE QUALITY OF U.S. GRAIN AND PROBLEMS THAT ARE
ASSOCIATED WITH CONTROL OF NOXIOUS WEEDS

FEBRUARY 8 AND 22, 1990
MARCH 28, 1990

Printed for the use of the
Committee on Agriculture, Nutrition, and Forestry



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PREPARATION FOR THE 1990 FARM BILL

Enhancing Grain Quality

THURSDAY, FEBRUARY 8, 1990

U.S. SENATE, SUBCOMMITTEE ON AGRICULTURAL RE-
SEARCH AND GENERAL LEGISLATION OF THE COMMITTEE
ON AGRICULTURE, NUTRITION, AND FORESTRY,

Washington, DC.

The subcommittee met, pursuant to notice, at 9:30 a.m., in room SR-332, Russell Senate Office Building, Hon. Thomas A. Daschle (chairman of the subcommittee) presiding.

Present or submitting a statement: Senators Daschle, Kerrey, and Bond.

STATEMENT OF HON. THOMAS A. DASCHLE, A U.S. SENATOR FROM SOUTH DAKOTA

Senator DASCHLE. The hearing will come to order. I want to thank everybody for coming, and if people will take their seats, we will begin.

This is the first hearing on grain quality conducted by the Subcommittee on Agricultural Research and General Legislation of the Committee on Agriculture, Nutrition, and Forestry this year. It is an ongoing series of hearings that began last year in South Dakota,¹ but the first hearing this session of Congress. For that and a lot of other reasons that we will talk about in a moment, this is a very historic hearing, at least from the perspective of the Agriculture Committee.

There are problems with the quality of U.S. grain. These quality problems hurt the competitive position of the United States. Too many industries in the United States have failed to compete in terms of quality, and the consequences in some cases have been extreme. Quality factors will become increasingly important to the grain industry as foreign buyers become more sophisticated and demanding in performance. This will be true for domestic buyers as well.

The U.S. grain industry is missing the economic incentives that reward quality. The rewards all apply to quantity. Legislation is now essential, in my view, to reshape the incentive system so that farmers can produce the best quality grain and be properly reward-

¹ The hearing held in Huron, SD, entitled, "Grain Quality Issues Affecting U.S. Farmers" (S. Hrg. 101-185) was printed in 1989. Hearings entitled, "Enhancing Grain Quality," held on February 8 and 22, 1990, and a hearing entitled, "Noxious Weeds," held on March 28, 1990, are printed as Part III, Preparation for the 1990 Farm Bill (S. Hrg. 101-259).

ed. This morning's hearing, and another scheduled for February 22, build upon the findings of a congressionally mandated report by the Office of Technology Assessment, entitled "Enhancing the Quality of U.S. Grain in International Trade," released 1 year ago. Using that report as a foundation, a bill entitled the Grain Quality Incentives Act of 1989, S. 1977, was introduced by Senator Bond and myself, plus Senators Kerrey and Leahy, at the end of the first session of this Congress. The bill was introduced to put the issue of grain quality improvement on the farm bill agenda in a very well defined way.

The grain industry has had time to examine and discuss the bill that was introduced, and now we will compile the views of the industry and take them into account as refinements are made to the bill.

The first panel of witnesses consists of spokesmen for the Department of Agriculture, Jo Ann Smith, the Assistant Secretary for Marketing and Inspection Services; and Philip Christenson, Assistant Administrator for Food for Peace and Voluntary Assistance, in the Agency for International Development.

The USDA released its farm bill proposal earlier this week. It includes an impressive list of ongoing activities and identifies several issue topics in the area of grain quality. However, it does not demonstrate a commitment to improving grain quality per se, nor does it suggest any actions that will be taken to solve problems that have been longstanding. The importance of setting policy direction and goals concerning grain quality are simply accentuated by the shortcomings of the farm bill proposal.

An important part of the grain industry, and the group least consulted in discussions grain quality, of course, are the users.

Today we are happy to offer as witnesses to the committee spokesmen for two of this Nation's most important markets for grain: the Soviet Union and the European Community (EC). This, I might add, is the first time, to our knowledge, at least in the records of the Committee on Agriculture, that representatives of the Soviet Union have been asked to testify.

Mr. Shestopalov and Mr. Ageev have traveled from the Soviet Union, and Mr. Vervaeke has traveled from Belgium to testify at this hearing on grain quality. The topic is obviously critical to them.

The U.S.S.R. and the EC are vitally important markets for U.S. agriculture. In fiscal 1989 the U.S.S.R. purchased nearly 5.3 million metric tons of wheat and 15.6 million metric tons of corn, making it the second largest wheat market and the second largest corn market. The value of wheat, corn and soybeans exported to the U.S.S.R. in fiscal 1989 was about \$2.8 billion. The EC is by far the largest market for U.S. soybeans importing 5.6 million metric tons in fiscal 1989. The value of wheat, corn, and soybean exports to the EC in fiscal 1989 was nearly \$2 billion.

The third panel of witnesses this morning will include Mr. Riedel, the American Soybean Association; Mr. McCoy, the North American Export Grain Association; and Mr. Wilson, U.S. Wheat Associates. This panel is called the export promoters because it is the job of these gentlemen or the businesses they represent to

market U.S. grain. If there are grain quality problems, this panel hears about them and is prepared to discuss those this morning.

So with that, let me welcome our ranking member, a person who has been extremely helpful in creating the legislative agenda we have with regard to grain quality, and ask Senator Bond if he would have any opening remarks.

**STATEMENT OF HON. CHRISTOPHER S. "KIT" BOND, A U.S.
SENATOR FROM MISSOURI**

Senator BOND. Thank you, Mr. Chairman. I want to begin by acknowledging the great leadership role you have played in this issue. I want to thank you for the time and attention and the staff resources you have devoted to this. I think it is an extremely important subject. I am delighted we have this hearing today. I cannot think of a better panel of witnesses than you have assembled.

I must begin with an apology to the witnesses. This happens to be the day that the majority leader has chosen to set aside the hours from 10 a.m. to 12:30 for discussing acid rain. For those of you who follow the U.S. Congress, you will know that Missouri and eight other Midwestern States are targeted to take the brunt of acid rain proposals, and in order to make sure that our farmers can continue to afford electricity in the future, I am going to have to leave and be involved deeply in those negotiations.

My staff obviously will be here, and I will read with a great deal of interest the testimony of all the witnesses.

Mr. Chairman, my interest in grain quality goes back quite a few years before you and I had the opportunity to come to this body. As Governor of Missouri I had the opportunity to lead several foreign trade missions, and I became very much aware of what it requires to succeed in a competitive world marketplace. In my view, if the question is competitiveness, the answer is quality. It does not matter if we are talking cars, cattle or corn. Price gets the attention, but quality keeps it. I have been on agriculture trade missions where I have talked to buyers in other countries who said we have problems with our grain quality.

Now I know we can discount some complaints as buyer's remorse. We can discount part of it as negotiating. But we have seen too much evidence personally of concerns about quality. As I travel throughout Missouri, my farmers recognize the importance of quality. Yet current markets seem to emphasize quantity rather than quality. Clearly improvements have been made in recent years, but it makes little sense to me to sit on our hands and insist that no further changes are warranted. As I become more involved in grain quality issues, I have been disappointed to learn that the prevailing attitude seems to be everything is OK, it is getting better, "no problema." To me this is a mistake. We can go back to a headline from the Kansas City Star in the heart of the breadbasket. This is back in August of 1986. Following the trail of American grain, it talks about problems with unwanted grain, hidden dirt, hidden water, less protein, hidden bugs, misleading loading. In 1987, the Farm Journal talked about the lost logic of clean grain.

And just within the last few months, the Farm Journal came out with a poll on what American wheat farmers really think. Seventy-one percent had a view on decoupling. Seventy-five percent had views on international policy. But, 91 percent say cleaner grain is more competitive and want to raise U.S. grain standards to guarantee that U.S. wheat is at least as clean as Canadian and Australian wheat sold in world markets.

I think the message is clear, Mr. Chairman. Quality factors will become increasingly important as buyers become more sophisticated. In a buyer's market end-use characteristics are paramount. Furthermore, we have to remember that grain quality is not just an export issue. It is an important domestic issue as well. Our domestic millers, our processors, and bakers have to have consistent supply, consistent quality, consistent grain if they are going to produce the kind of food products that they want to sell in this country.

Last year the chairman and I joined together to seek ways to improve the quality of grain, and had very good staff work done. I would say a special thanks to Jasper Womach who has assisted us. As a result of our discussions and hearings then, we did introduce S. 1977. To say that it initiated discussion might be an understatement. We have received many comments. We have read with interest many articles and editorials, some of which were written by witnesses scheduled to appear before the subcommittee. It is truly amazing to see the diversity of views when it comes to grain quality. I still wonder why anybody would want to resist improving the quality of U.S. grain, but there are a number of arguments made about it.

We have all said that the bill was drafted to stimulate discussions, and there have been many constructive suggestions to improving the bill. There have been some suggestions that we scrap it. I do not propose we follow that suggestion, but we will look at the information given us in these hearings, and talk about modifications to improve the bill. We do not want to put companies out of business. We want to make sure that our farmers get compensated for the quality grain that they produce. The hearings build on the last year's OTA study, but unfortunately too little attention was paid to it.

Earlier this week we had the opportunity in this room to hear Secretary Yeutter as he released proposals of the administration for the 1990 farm bill. I was very much impressed with the comprehensive nature of his work, and I complimented him on how good a report they put out in general. But I must say, I was a little disappointed when it came to the section on grain quality. Perhaps my report or my document was missing a few pages. The initiatives that were listed there seemed to be recitation of actions that were started some time ago. It is my understanding that sorghum and corn growers have been trying for years to change the grain standards so that buyers could distinguish between the level of broken kernels versus foreign material.

Studies are an important tool, but too much study can be a problem. Paralysis by analysis is not an uncommon Washington beltway malady. We will monitor, with interest, the recent decision of the Grain Quality Workshop to oppose the changes for sorghum.

Also, we need to hear more about the status of Cu-Sum. It seems to me that consistency plays a vital role in our exports, and I want to explore ways to ensure that foreign buyers receive what they pay for, even if they purchase it in sublots. I am told that USDA has a strong commitment to improving the quality of U.S. grain. We have a very distinguished Administrator addressing us today. I know she is committed to it. But we feel that much more needs to be done.

Mr. Chairman, I join you, and our distinguished friend from Nebraska in welcoming these distinguished witnesses. We are particularly grateful for our friends from the Soviet Union, Mr. Shestopalov and Mr. Ageev, for traveling here today, and Mr. Vervaeke from Belgium. We think it is very significant, very important, that they have come. As a special note, I would like to welcome a neighbor and long-time good friend, Gary Riedel, a soybean producer from Centralia, Missouri, which is just outside of Mexico, Missouri, which is my hometown. He is accompanied by Jim Guinn, also a Missourian, of the American Soybean Association. Again, I thank you for putting this hearing together, and it is a pleasure to work with you on this extremely important issue.

Senator DASCHLE. Thank you, Senator Bond. Senator Kerrey.

STATEMENT OF HON. J. ROBERT KERREY, A U.S. SENATOR FROM NEBRASKA

Senator KERREY. I must just quickly say that for a terrifying moment there when you said right next to Mexico, I thought maybe they had reversed the Louisiana Purchase and had moved the border.

Senator BOND. We are just below Paris and just up the road from Versailles, "Versay" they call it.

Senator KERREY. Well, I want to echo what Senator Bond has just said. I assume that some of the urgency that you feel for getting a clean grain bill passed, and I am now a cosponsor of S. 1977 (Grain Quality Incentives Act of 1989), comes from your experience as Governor and trying to encourage export sales of Missouri products as I did as Governor of Nebraska and finding repeated incidences where sales were lost as a consequence of qualitative concerns. And in an era when we are increasingly trying to orient our programs so that the producer is conscious of the marketplace and making decisions based upon what that marketplace wants, it seems to me this effort is imperative. There is an underlying urgency to take action.

Above all I want to send the message that I am prepared to fight for a clean grain bill this year. I think it is an imperative. I think we have seen far too many examples where people have lost sales or have received a reduced price for their grain as a consequence of deterioration of qualitative concerns. Perhaps the buyer is citing quality concerns for ulterior reasons, but as long as the buyer can legitimately do that because of our policies, then it seems to me that they are in an advantageous position that we do not want them in. So I share not just the intent to enact something this year, but the urgency, which I assume is based upon your experience, Senator, as Governor. And I appreciate, Senator Daschle,

your working on this because I think it is terribly important. I hear it over and over and over from my own farmers, and I have reached the conclusion, strongly felt, that they are right.

Senator DASCHLE. Thank you, Senator Kerrey. Senator Bond had made mention of a matter that I really want to associate with and reconfirm, and that is the tremendous work done by Jasper Womach of our staff. He has been an incredible force behind this legislation, and coming up with this comprehensive approach and with this analytical approach, and I must say an objective approach as one could possibly hope to have, and I really want to thank him on behalf of all the committee members for his contribution in this effort.

I think we will begin now with our first panel. The panel is represented here with the U.S. Department of Agriculture, and the Food for Peace and Voluntary Assistance. Representing the Department of Agriculture is the Assistant Secretary for Marketing and Inspection, Jo Ann Smith. Mrs. Smith, let us begin with you.

STATEMENT OF JO ANN R. SMITH, ASSISTANT SECRETARY, MARKETING AND INSPECTION SERVICES, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, DC; ACCOMPANIED BY DAVID R. GALLIART, ACTING ADMINISTRATOR, FEDERAL GRAIN INSPECTION SERVICE (FGIS), WASHINGTON, DC, AND STEVE GILL, ASSISTANT TO THE DIRECTOR, COMMODITY OPERATIONS DIVISION, AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE (ASCS)

Mrs. SMITH. Thank you, Mr. Chairman and members of the subcommittee.

I have accompanying me this morning Steve Gill, who is the Assistant Director for Commodity Operations for ASCS, and Dave Galliart, who is the Acting Administrator for the Federal Grain Inspection Service.

On behalf of the Department of the Agriculture, we welcome the opportunity to comment on grain quality initiatives outlined in S. 1977, the Grain Quality Incentives Act of 1989.

ISSUE OF GRAIN QUALITY

We applaud the efforts of this subcommittee to address the issue of grain quality. The competitive environment of the international grain market and increased concern over food safety by the public have elevated the importance of grain quality. The challenge we now face is to decide what measures the U.S. Government should take in order to assist in promoting grain quality improvements. How can we build upon many strengths of the U.S. grain industry without disrupting the very processes that are responsible for the success of today's grain markets?

My testimony today summarizes a more detailed prepared statement that has been presented to this subcommittee. Recognizing that the subcommittee has a great deal of information to cover, I will keep my remarks brief.

OTA REPORT

The Office of Technology Assessment report clearly identified that the task of improving U.S. grain quality required a marketwide approach. The report also concluded that reviewing the grain standards alone will not adequately respond to the problem. This subcommittee is reviewing legislation representing a marketwide approach. This is serious, far-reaching legislation that warrants very careful review, and the Department is willing to participate fully in this process.

S. 1977

We support many of the objectives set forth in S. 1977. However, we believe that much of it can be accomplished without legislative action.

For example, we strongly agree that the official grain standards should reflect levels of soundness and purity consistent with the needs of the major end-users of each grain. In fact, our efforts regarding food safety demonstrate a commitment to achieving acceptable purity levels. We are monitoring grain samples for pesticide residues and mycotoxins as we move toward developing rapid test capabilities that will permit effective and efficient testing of grain for pesticides and mycotoxins, as it moves through the grain market. Once testing methods are available we will incorporate them into the inspection process.

For example, Secretary Yeutter's farm bill recommendations included a provision that would require all corn in export shipments to be tested for aflatoxin. Furthermore, we are evaluating the grain standards and will recommend changes designed to improve the soundness of grain. We also support improved communication of variety end-use performance criteria to producers and we support achieving cleaner export grain. However, how we accomplish these initiatives calls for indepth review and direction. Amending the Federal Seed Act to require end-use quality performance labeling, for example, has only limited effectiveness, and establishing an export cleanliness standard could have a major market impact with unknown or uncertain benefits.

THE GRAIN INDUSTRY FROM BREEDER TO EXPORTER MUST CONSTANTLY
REACT TO THE EVER-CHANGING FORCES WITHIN THE GRAIN MARKET

Grain is unique, and the grain industry from breeder to exporter must constantly react to the ever-changing forces within the grain market. Expecting each grain and oilseed to fit into a predescribed set of rules is impractical. This is especially true as new crops, such as canola, begin to establish a foothold in the world market.

VARIETY OF COMPLAINTS FROM FOREIGN CUSTOMERS

During the past years, we have received a variety of complaints from foreign customers. Some were concerned about receiving excessive dockage, foreign material and broken kernels. Others were concerned about insect infestation, the presence of aflatoxin, and unacceptable levels of wheat protein.

RESPONSE TO THOSE CONCERNS

In response to those concerns, we have initiated research and worked with the industry sponsored Grain Quality Workshop in a continuing effort to provide the marketplace with the information needed to begin to improve grain quality. Some of our accomplishments in the past years include: improving procedures and calibrations for determining wheat protein, implementing procedures for determining the oil and protein content of soybeans; approving commercially available aflatoxin tests for use in corn; tightening the insect tolerances for all grains; and adopting the Food and Drug Administration's limit of 32 insect damaged kernels per 100 grams as the U.S. sample grade criteria for wheat.

The Office of Technology Assessment report also found that many users of U.S. grain indicated the need for other end-use tests not currently found in the standards to determine wholesomeness and intrinsic quality. We plan to continue our investigation and research into ways to develop and introduce objective tests into the national inspection system. Current research, other than the pesticide residue and mycotoxin testing project I mentioned earlier, includes: techniques for detecting hidden and dead insect infestation; objective wheat classification; and rapid tests for starch, oil, and protein in corn. These projects are designed to meet the needs of the user and to fulfill the objectives of the standards.

In closing, Mr. Chairman, we again appreciate the opportunity to discuss grain quality issues, actions taken thus far by the Department and future actions, and our response to the proposed legislation. We plan to continue working with Congress, other Federal agencies, and the grain industry to improve grain quality. Thank you.

Senator DASCHLE. Thank you, Mrs. Smith. Mr. Christenson.

[The prepared statement of Mrs. Smith, attachments 1-4, and responses to questions submitted by Senators Daschle, Lugar, and Boschwitz appear at the conclusion of the hearing.]

STATEMENT OF PHILIP L. CHRISTENSON, ASSISTANT ADMINISTRATOR, BUREAU FOR FOOD FOR PEACE AND VOLUNTARY ASSISTANCE, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, WASHINGTON, DC

Mr. CHRISTENSON. Thank you, Mr. Chairman. I will summarize my remarks and submit my formal statement for the record.

QUALITY ISSUES INVOLVING U.S. GRAIN

Like many people I have been very concerned about reports in the paper and in various professional journals about quality issues involving U.S. grain. I had expected when I became the Assistant Administrator for Food for Peace that this would be a major issue that I would be dealing with on a day-to-day basis.

I am happy to report that in the 14 months I have had this job I have discovered that the grain quality issues that we deal with are different than what I expected.

PROBLEMS ARE DUE TO LACK OF ADEQUATE COMMUNICATIONS AND THE
BIDDING SYSTEM

Our problems often derive from the lack of adequate communications between our exporters or our government officials and the end-user overseas. In almost every country, food aid is negotiated through the Ministry of Finance. We have discovered that there are cases in which a Ministry of Finance's concept of what is good for the country and the millers' and the grain users' expectations have not been well coordinated.

For instance, in a recent case in Liberia, the Ministry of Finance specified No. 5 grade rice which is low on the grading standard. The buyers in Liberia have been very unhappy because they did not receive the quality to which they were accustomed. Problems such as this can be avoided through clear communication with our recipients.

We also have a problem in general, I think, in that Public Law 480 is procured on a price competitive bidding system. In a price competitive bid, you do not necessarily get the highest standards within the range of a grade.

Suppliers bidding commodities at the lower end of No. 2 export wheat, for instance, may be willing to offer a better price than those whose export wheat is at the higher end of the grade.

WE ARE LOOKING FOR WAYS TO CREATE A MORE COMMERCIAL
RELATIONSHIP IN THE PUBLIC LAW 480 PROGRAM

We are looking for ways to create a more commercial relationship in the Public Law 480 program. A buyer and a seller have a mutual interest in maintaining their relationship. If a transaction is a one time "price-is-the-only-factor-that-counts" type deal, it stands to reason that quality will not be as good as if you have a commercial relationship which you are trying to maintain. We are looking at ways of getting away from a price only basis and moving the Public Law 480 program into a process in which we are financing a transaction which more nearly resembles a commercial transaction.

I would be happy to answer any other questions.

Senator DASCHLE. Thank you, Mr. Christenson.

[The prepared statement of Mr. Christenson appears at the conclusion of the hearing.]

Senator DASCHLE. Mrs. Smith, I guess you probably expect the committee, seemingly on both sides of the aisle, to be a little skeptical about the ability of the Department to follow through with some of its well-intended goals. I heard you this morning. I heard Secretary Yeutter yesterday, and it sounds well and good, but what assurance would there be that you will follow through? Have you set some delineated dates? Have you set some specific goals to be accomplished by a certain period of time with which we can judge progress? Or are we going to be back here in a year saying, well, you know, we all had good intentions a year ago, but we have all these reasons why nothing happened?

Mrs. SMITH. I can appreciate your concern. In your position, we certainly understand and appreciate your interest. Let me say that since coming with the Department and looking into the grain qual-

ity issue and the other aspects of the Federal Grain Inspection Service, I am pleased to be able to say to you that we do have plans. We do have timetables, and I think those, of course, are very important. Rulemaking processes take time. Government takes time. We will be very frank about what we are doing and report to this committee. We certainly will share with you our number one, two, three, four, or five priorities, and if you would like information on some key points of that 5-year plan, I or Mr. Galliart would be happy to share those with you.

Senator DASCHLE. Well, that would be helpful. If you have a plan, if you have some specific dates, to the extent you can share them with us, I think that would help in building some of the confidence that we are going to need as we go forth. Can you share them with us this morning?

Mr. GALLIART. We developed a plan some months ago and made a wide distribution of the Management Plan. Actually we sent the Management Plan to the Congress. I would be happy to submit the plan for the record. In the plan, we have goals I-III that have about 25 initiatives, most of which represent actions to improve grain quality.

[Management Plan, U.S. Department of Agriculture, Federal Grain Inspection Service, submitted by Mr. Galliart follows:]



United States
Department of
Agriculture

Federal Grain
Inspection
Service

May 1989

Management Plan

MISSION STATEMENT

The mission of FGIS is to facilitate the marketing of grain, oilseeds, pulses, rice, and related commodities by:

- Establishing descriptive standards and terms,
- Accurately and consistently certifying quality,
- Providing for uniform official inspection and weighing,
- Carrying out assigned regulatory and service responsibilities, and
- Providing the framework for commodity quality improvement incentives to both domestic and foreign buyers.

MESSAGE FROM THE ADMINISTRATOR

Dramatic changes are taking place in the nature of inspection and weighing technology, in the expectations of the grain marketing system, in the needs and interests of Agency employees, and in the scrutiny we receive from Congress and other interested parties.

To be responsive to the various constituencies that the Agency serves and to fulfill its responsibilities to its employees, Federal Grain Inspection Service (FGIS) management prepared the following strategic plan. The plan reflects input from the Agency's clientele and employees. We envision this document to be a dynamic blueprint for future Agency growth and development. Because this is the first time that FGIS has prepared such a plan for broad distribution to its customers and employees, we expect that there may be refinements in the future. We welcome constructive comments.



W. Kirk Miller

The management plan articulates the FGIS mission, its long-term goals, and a series of objectives that are designed to accomplish the following within the next 5 years:

- o The creation of a marketing information system that identifies quality factors important to the marketing of grain.
- o A shift in methodology from subjective to objective inspection and weighing.
- o Establishment of a quality assurance program for all inspection laboratories within the national inspection system.
- o Development of an automated electronic communication network that connects all inspection and weighing points.
- o Automation of inspection and weighing equipment at all export laboratories, and
- o Implementation of an organization and career pattern that reflects and supports the above changes in FGIS work processes.

FGIS management recognizes that planning is a dynamic process and that these plans will need to be modified to meet the changing needs of the Agency and its constituents. Our hope is that this plan will provide direction and focus to Agency actions far into the future.

Sincerely,

W. Kirk Miller

W. Kirk Miller

FGIS GOALS

To ensure continued attention to the mission objectives of the Agency, FGIS developed the following goals:

GOAL I

Maintain an Inspection and Weighing System Second to None

GOAL II

Enhance Employee Development and Satisfaction

GOAL III

Improve Productivity
(Cost Effectiveness)

The Agency's plan to accomplish these goals incorporates and reflects input from the following internal and external sources:

- - an FGIS headquarters employee task force offering suggestions on improving FGIS,
- - a quality of worklife survey in which all FGIS employees were asked to share their workplace and organizational expectations,
- - FGIS collateral duty safety and health officers,
- - a scientific orientation group (comprised of scientists from FGIS, other government agencies, and the private sector) that evaluated the extent to which FGIS is appropriately utilizing the most contemporary and relevant science and technology in the inspection and weighing of grains and oilseeds,
- - a report from the Administrator's office regarding ideas for improving FGIS programs,
- - the FGIS Equal Employment Opportunity task force, and
- - the FGIS 5 year research plan.

QUALITY ASSURANCE AND RESEARCH DIVISION

The Quality Assurance and Research Division (QARD) is responsible for developing new objective tests and methods for determining grain quality; providing reference standards for FGIS methods and developing new reference standards as required; developing criteria and recommending specifications for electronic instrumentation to improve reliability of grain inspection; developing and maintaining an Agencywide quality control program covering all aspects of grading and inspection; developing and maintaining an Agencywide equipment checktesting program; developing and carrying out an equipment type approval program; developing and maintaining an Agencywide quality assurance (blind, referee, check) sample program; maintaining uniform application of standards for grains and commodities; rendering final decisions on inspection appeals (Board); and conducting technical training for field personnel.

During the next 5 years, the QARD will play a major role in moving the Agency toward more objective testing to replace subjective tests for grain quality. To help ensure such a move, the Division will continue to improve the monitoring of existing test methods; update reference methods as scientific procedures change; develop specifications for electronic instrumentation; initiate and carry out an instrument type evaluation and approval program; and implement a quality control program covering all aspects of grain grading and equipment checktesting. Further, major emphasis will be placed on technical training of field personnel.

FIELD MANAGEMENT DIVISION

The Field Management Division (FMD) directs field operations, develops inspection and weighing policies and procedures, establishes the U.S. Standards for grain, oilseeds, pulses, legumes, and rice, and oversees delegated and designated agencies.

During the next 5 years, FMD must concentrate on advancing new testing and ADP technology into the daily operations of the national inspection service. The QARD will provide improved testing technology to measure the impurities, physical imperfections, wholesomeness, and intrinsic attributes of the products inspected by the national inspection system. QAR will also provide timely and precise quality control information that will enable inspection personnel to identify and correct weaknesses before problems develop. Furthermore, the Resources Management Division (RM) will enhance our ability to collect market data through automated information systems, reaching all segments of the Federal-State-private inspection network. In order to integrate new testing technology, advance ADP information services, and enhance quality performance information into the daily operations of the national inspection system, FM must carefully plan, provide training at all levels, and rely on a consolidated team effort. FM personnel possess the skills, knowledge, and willingness to address this challenge and successfully achieve FGIS goals.

INTERNATIONAL MONITORING STAFF

The International Monitoring Staff (IMS) administers the monitoring program for U.S. grain shipments exported to foreign nations to evaluate whether the quality and weight of grain received by importers is comparable (within expected variation) to the quality and weight certified upon official inspection in the United States. In doing so, IMS investigates foreign complaints on grain quality, meets foreign purchasers of U.S. grain to gather information about quality of U.S. grain they import, conducts educational briefings for importers, and coordinates Agency activities involving foreign travel.

IMS has realigned its priorities to better support and accomplish agency goals. To meet this challenge, IMS is updating its educational programs; working closer with other USDA Agencies and cooperator organizations to improve public relations here and overseas; planning projects to monitor U.S. grain quality from origin to destination ports; and encouraging collaborative studies with receivers. Our overall objective is to continually enhance the credibility and image of FGIS in the international grain marketplace.

RESOURCES MANAGEMENT DIVISION

The Resources Management Division (RM) provides leadership, coordination, and support for the FGIS administrative management program. In doing so, RM administers programs to provide budget, financial, automation, directives, regulatory, health, safety, public affairs, training, and management improvement services. It also coordinates, evaluates, and negotiates all other resources needed to provide administrative support services for FGIS.

To better support Agency goals (especially the second, Enhance Employee Development and Satisfaction), RM has realigned its priorities. It is continuing to refine the Agency planning systems; revamping and reorienting the Agency training programs and enhancing Agency communications through a reemphasis of its Public Affairs and Directives Programs. In addition, it is increasing its support services for utilization of automation in Agency communications and the performance of work.

COMPLIANCE DIVISION

The Compliance Division strives to ensure that the United States Grain Standards Act (USGSA) and the related provisions of the Agricultural Marketing Act of 1946 are implemented accurately and uniformly. The Compliance Division accomplishes this objective by conducting operational reviews and program evaluations, conducting investigation of alleged program violations, implementing enforcement actions, and administering other related regulatory programs.

During the next 5 years, we plan to improve the compliance program by increasing the effectiveness of the Agency's internal review programs and by streamlining, through automation, the paperwork associated with all review and investigation processes. We also plan to implement more timely and effective enforcement actions by utilizing fully the civil penalty and other administrative provisions of the USGSA.

To better enable FGIS to determine the overall effectiveness of the nationwide official inspection and weighing system, the Compliance Division will assist in integrating all internal review processes into the Agency's management control program. Essentially, management control is a USDA initiative that requires Agencies to review all aspects of their internal operations to ensure that these operations are being implemented effectively and efficiently.

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E. Improve staff proficiency and competency of Compliance Division.	26
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GOAL I

MAINTAIN AN INSPECTION AND WEIGHING SYSTEM SECOND TO NONE

LONG TERM OBJECTIVES, STRATEGIES AND INITIATIVES

A. Establish a statistical quality assurance program to monitor and maintain accuracy of all inspection functions.

Champion: Gail Jackson - Director, Quality Assurance and Research Division

Strategy - Integrate further use of Automation to facilitate the flow of data throughout the inspection system. Consolidate quality control functions in one location under a single operational unit. Create a more positive environment with an improved quality control program that strengthens the integrity of services and enhances their delivery.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Review all inspection functions and prioritize on the basis of need for statistical quality control.	X	-	-	-	X
2. Train senior management on potential for quality control.	X	-	-	-	-
3. Define the ADP architecture for a quality control network.	X	-	-	-	X
4. Develop a quality assurance handbook for all laboratory methods.				X	-
5. Lease and develop additional space and/or renovate existing space for the Quality Assurance and Research Center to accommodate all quality control functions.	X				
6. Develop and implement a plan to integrate the quality control/assurance program throughout all of the inspection functions.	X	-	-	-	-

GOAL I

B. Establish marketing standards and related procedures that reflect the four purposes of standards established in section 2 of the United States Grain Standards Act (USGSA).

Champion: John W. Marshall - Director, Field Management Division

Strategy - Review existing standards for grain, oilseed, pulses, legumes, and rice; evaluate possible use of new testing technology; and revise standards to better reflect section 2 requirements of the USGSA.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Review the Office of Technology and Assessment study report and evaluate the general role of standards and new testing methodologies.			X - - - X		
2. Wheat Standards and Inspection Procedures.					
a. Propose to include Falling Number testing as official criteria under USGSA.			X - - - X		
b. White Wheat Classification					
(1) Revise standards to eliminate the 75 percent vitreous kernel definition and establish two classes (Hard White wheat and Soft White wheat.			X - - - X		
(2) Provide hardness testing as official criteria, upon request.			X - - - X		
(3) Evaluate possibilities of Near-Infrared Hardness classing system.			X - - - X		
(4) Develop single-kernel hardness classing system.			X - - - - - - - - - X		
c. Red Wheat Classification					
(1) Provide Near-Infrared Hardness as official criteria, upon request.			X - - - X		
(2) Evaluate possibility of Near-Infrared Hardness classing system.			X		

GOAL I

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
(3) Develop Single-Kernel Hardness classification system.	X	-	-	-	-
d. Study the effects of combining wheat dockage and foreign material.	X				
e. Conduct general review of wheat standards.	X	-	-	-	-
3. Corn Standards and Inspection Procedures.					
a. Broken corn and foreign material review and standards change.	X	-	-	-	X
b. Evaluate use of single kernel moisture tester and breakage susceptibility tester in the national inspection system. Implement as official, criteria or factor, if applicable.	X	-	-	-	X
c. Offer oil, starch, and fiber testing as official criteria.				X	-
d. General standards review.				X	-
4. Soybean Standards and Inspection Procedures.					
a. Implement oil and protein testing.	X				
b. General standards review.		X	-	-	-
5. Sorghum Standards and Inspection Procedures.					
a. Review standards changes for:					
--Broken corn and foreign material					
--Dockage and foreign material					
--Classes					
--Brown sorghum limits	X	-	-	-	X
b. Study adequacy of current damage line.					
c. Offer protein, starch, and fiber testing as official criteria.					X
d. General standards review.				X	-
6. Develop and propose rapeseed standards.	X	-	-	-	X

GOAL I

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
7. General review of barley standards.				X - - - X	
8. General review of flaxseed, rye, triticale, sunflower, and mixed grain standards.					X
9. General review of oats standards.				X - - - X	
10. Rice Standards and Inspection Procedures.					
a. Evaluate heat damage and objectionable seed limits for rough and brown rice.	X - - - X				
b. Study total free fatty acid testing procedures.	X				
c. Evaluate subplot size and inspection plans.		X - - - X			
d. Evaluate need for wild rice standards.		X			
e. General review of rice standards.			X		
f. Draft CODEX rice standards with France, Netherlands, and Brazil.	X - - - X				
11. Dry Bean Standards and Procedures					
a. General standards review.	X - - - X				
b. Revise/update Dry Beans Handbook.		X			
12. Whole Dry and Split Peas.					
a. General standards review.					X
b. Revise/update handbook.			X		
13. Review adequacy of animal filth limits under current standards. (Correlate to Food and Drug Administration limits.)			X		
14. Review benefits of reporting all factors to the nearest 0.1 percent.			X		
15. Evaluate the need for "not standardized grain" or "screening" standards.					X
16. Conduct Consolidated Review Program (limited review) of oversight of delegation/designation arrangement as required by the Management Control Plan.			X		

GOAL I

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
17. Conduct Consolidated Review Program (limited review) protein program as required by Management Control Plan.					
			X - - - X		
C. <u>Establish a system for applying of new and innovative technology to grain grading and inspection.</u>					

Champion: Gail Jackson - Director, Quality Assurance and Research Division.

Strategy - Redirect resources to areas of highest priority in the field of technology. Improve communications and interaction with external research groups, industry, universities, and trade associations.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Establish, with an operational budget, a functional resource information system at the Quality Assurance and Research Center.					
			X		
2. Identify research groups, national and international meetings and develop a policy for Research and Development Staff to attend or interact accordingly.					
			X:	Ongoing	
3. Hold at least one conference each year where industry, university, and trade organizations are invited through public notice to discuss FGIS research programs.					
			X:	Ongoing	
4. Develop a professional scientific visitation program with universities and other scientific organizations at the national and international level.					
			X:	Ongoing	

GOAL I

- D. Apply and improve current technology to measure new informal end-use factors and improve the accuracy and reproducibility of presently determined factors.

Champion : Gail Jackson - Director, Quality Assurance and Research Division.

Strategy - While adhering to the 5-year research plan, keep abreast of the latest technological developments for possible use in the inspection system, investigating those which facilitate the change to objective testing.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Develop a soybean oil and protein testing program.	X				
2. Select a method and procedure for determining chemical residues and toxins.			X - - - X		
3. Improve evaluation of equipment for removing dockage and foreign material in a more effective manner.	X - - - - - X				
4. Develop a procedure for standardizing the falling number method and determining the usefulness of the stirring method for determining sprout damage.	X - - - X				
5. Recommend a revised uniform dockage procedure for wheat.	X - - - - - X				
6. Recommend a method for determining corn breakage susceptibility.	X - - - X				
7. Develop and implement an accurate and cost effective system for classifying wheat.	X - - - - - - - - - - X				
8. Develop an inspection system that reflects more of the end-use values of grains.	X - - - - - - - - - - X				

GOAL I

E. Improve the efficiency and effectiveness of the national inspection system.

Champion: John W. Marshall - Director, Field Management Division

Strategy - Review and revise the regulations and program directives as needed to (1) provide impartial service, (2) apply new testing technology, (3) promote ADP advancement, (4) eliminate unnecessary requirements, if any, and (5) verify the adequacy of current procedures.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Review and revise, as needed, Part 800 of Title 7, Code of Federal Regulations: the general regulations of FGIS.		X - - - X			
2. Conduct Compliance Review (limited review) of graded commodities inspection program as required by the Management Control Plan.		X - - - - - X			
3. Licensing Program					
a. Transfer issuance responsibilities to field offices.		X			
b. Update examinations		X			
c. Evaluate corrective action program. (Follow limited review format.)		X			
d. Conduct limited review of the licensing program as required by the Management Control Plan.		X			
4. Revise Cu-Sum Plan.		X			
5. Aflatoxin					
a. Revise instruction to update procedures and incorporate new testing methodology.		X - - - X			
b. Evaluate benefits of including aflatoxin testing as official criteria under USGSA.			X		
6. Barge Inspection.					
a. Develop inspection plan for West Coast.		X			
b. Evaluate National Grain and Feed Association barge sampling proposal.			X		

GOAL I

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
7. Proposed Commodities.					
a. Conduct Consolidated Review Program (limited review of the commodity program) as required by the Management Control Plan.		X - - -	X		
b. Implement procedural changes related to Beltsville automation project.		X			
c. Revise/update handbook.		X			
d. Evaluate identity coding of ASCS packaged commodities.		X - - -	X		
e. Evaluate condition examination procedures.		X			
8. Standardize and consolidate checkloading procedures.		X			
9. Revise Food and Drug Administration agreement and instruction.		X - - -	X		
10. Develop ASCS/FGIS data system to permit electronic transfer of abstracts to field locations.				X - - -	X
11. Revise/update Hops Handbook.		X - - -	X		
12. Insects/Fumigation					
a. Develop in-transit rail-car fumigation procedures.		X			
b. Evaluate and implement new insect detection procedures.		X - - -	X		
c. Review application and impact of detecting hidden insect infestation.		X - - -	X		
13. General Inspection Procedures					
a. Update Book II.		X			
b. Conduct limited review of inspection services as required by the Management Control Program.		X			
c. Review APHIS Memorandum of Understanding.				X	

GOAL I

F. Ensure employees have the necessary weighing skills and tools to do their job.

Champion: John W. Marshall, Director, Field Management Division

Strategy - Continually monitor and review regulations, programs, instructions, and directives to keep them updated to the Agency's needs.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Rewrite and publish Chapter II of the Weighing Handbook.	X				
2. Develop and publish parameters for monitoring electronic weighing systems using process control and ADP technology.	X				
3. Develop and implement standardized training programs for supervision of weighing and scale testing.	X	-	-	-	-

G. Improve the efficiency and effectiveness of the national weighing system.

Champion: John W. Marshall, Director, Field Management Division

Strategy - Continually monitor, review, and update regulations, programs, instructions, and directives to keep them up to the Agency's needs.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Conduct Compliance Review (limited review) for test-weight reverification program as required by the Management Control Plan.	X				
2. Conduct Compliance Review (limited review) for railroad track scale testing program as required by the Management Control Plan.			X		

GOAL I

H. Promote ADP applications in field operations.

Champion: John W. Marshall, Director, Field Management Division

Strategy - Promote ADP applications and integrate use into managing field operations.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Evaluate need for increased Near-Infrared skills and develop a training program.	X	-	-	-	X
2. Evaluate quality control data for integration into day-to-day management.	X	-	-	-	-
3. Fully automate one Beltsville lab testing station with robotic equipment and interface with headquarters mini computer (Hewlett Packard 3000).	X	-	-	-	X

GOAL II

ENHANCE EMPLOYEE DEVELOPMENT AND SATISFACTION

LONG TERM OBJECTIVES, STRATEGIES AND INITIATIVES

A. Provide a safe and healthy environment where employees can perform assigned tasks efficiently.

Champion: John W. Marshall, Director, Field Management Division

Strategy - Research and develop guidelines for a safe and healthy workplace and standardize inspection laboratories.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Develop and publish optimum design specifications for grain inspection laboratories considering equipment and health and safety requirements.			X		
2. Work with the grain industry towards removal of all weighing supervision personnel from grain elevators and headhouses.		X	-	-	-

B. Improve radio communications within FGIS.

Champion: John W. Marshall, Director, Field Management Division

Strategy - Continually monitor, review, and evaluate Agency communication needs.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Determine FGIS' needs for fixed based and portable communication equipment based on existing and possible future locations and plan for purchase and implementation.				X	-

GOAL II

C. Improve FGIS EEO Program.

Champion: Les Malone - Assistant to the Administrator

Strategy - Ensure that the workplace is free from unlawful discrimination, including recruitment, selection, training, promoting, transfer, recognition, and benefits.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Develop an FGIS Directive to ensure representation by women and minorities on ranking panels.			X		
2. Develop a recruitment program to correct underrepresentation.	X:	Ongoing			
3. Develop recruitment materials pamphlets, and exhibits for dissemination.			X		
4. Monitor Missed Opportunities Program.	X:	Ongoing			
5. Review EEO performance elements for managers and include pertinent aspects of the Missed Opportunities Program.	X	-	-	X	
6. Establish and implement a system to track training by individual employee.	X	-	-	X	
7. Develop required documents to support upward mobility positions.	X:	Ongoing			

D. Establish an FGIS long-range organizational development process.

Champion: Robert "E" Soderstrom - Director, Resources Management Division

Strategy - Utilize management retreats and concepts of participative management and continuous organizational improvement to create an FGIS philosophy of management and Agency esprit de corps.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Prepare brochure of FGIS 5-year Management Plan for distribution to all employees and interested constituents.	X				
2. Incorporate total quality management into the long range process.	X:	Ongoing			

GOAL II

E. Establish a FGIS career development program.

Champion: Robert "E" Soderstrom - Director, Resources Management Division

Strategy - Use educational and experience profiles and individual development plans (IDP) to identify possible career advancements, future vacancies, and needed experience and skill factors.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Conduct an analysis of FGIS career advancement opportunities.			X		
2. Input career counseling with IDP.		X	-	-	X
3. Develop an automated education and experience profile data base on each FGIS employee.		X	-	-	X

F. Provide a safe and healthy working environment where employees can perform assigned tasks efficiently.

Champion: Robert "E" Soderstrom - Director, Resources Management Division

Strategy - Identify research techniques and methodology in order to improve working conditions and inspection procedures as they pertain to safety and health.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Move all employees out of headhouse by 1994.		X	-	-	-
2. Establish minimum safety, guidelines for all laboratories.		X	-	-	X
3. Design and implement an employee wellness program.		X	-	-	-

G. Improve International awareness of FGIS programs.

Champion: John Pitchford - Chief, International Monitoring Staff

Strategy - Improve methods of communicating information about FGIS to foreign trade groups, importers, processors, and others by developing new and improved visual aids.

GOALS II

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
2. Conduct review and analysis of information dissemination technology.		X			
3. Prepare guidelines for information dissemination based on Initiatives 1 & 2.			X - - - X		
4. Prepare feature article on FGIS women in management.		X - - - X			

J. Ensure that employees have the necessary skills to do their job.

Champion: Robert "E" Soderstrom - Director, Resources Management Division

Strategy - Develop an Agency wide needs analysis system. Educate program designers on utilization of training to achieve effective human resources management. Pursue new technology (VCR, computer) in the use of training.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Develop a FGIS training needs analysis system.		X - - - X			
2. Develop & implement a supervisory training system.		X - - - X			
3. Implement audiovisual system.		X - - - - - X			
4. Conduct collateral duty training system.		X			
5. Develop system for measuring training effectiveness.			X - - - X		
6. Identify future vacancies.		X: Ongoing			
7. Develop employee job safety training.		X - - - - - X			
8. Develop supervisor safety training.		X - - - - - X			

GOALS III

IMPROVE PRODUCTIVITY (COST EFFECTIVENESS)

LONG TERM OBJECTIVES, STRATEGIES, AND INITIATIVES

A. Develop a commitment to increase quality and productivity at all levels of the work place.

Champion: Robert "E" Soderstrom - Director, Resources Management Division

Strategy - Adopt a specific "quality" philosophy and program throughout the Agency.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Identify proven "quality" philosophy program.	X				
2. Evaluate available programs and make recommendations.	X	-	-	-	X
3. Obtain Administrator's approval for the adoption of the recommended a quality philosophy program for the Agency.				X	
4. Identify quality control training for all levels and functions.				X	- - - X
5. Implement quality philosophy and training.				X	- - - - - X

B. Increase utilization of information resources technology to improve productivity.

Champion: Robert "E" Soderstrom - Director, Resources Management Division

Strategy - Conduct continuing education of management and user groups. Explore new ADP applications and provide for dissemination of new ADP ideas. Encourage experimentation by work force in application technology.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Train field employees on uses of personal computer.	X:	Ongoing			
2. Convert historical records to micrographics.	X				
3. Establish a Domestic Grain Information System.	X	-	-	-	X

GOAL III

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
4. Study feasibility of automating export grain laboratories.	X	-	-	-	X
5. Develop ADP support systems for FGIS Quality Assurance and Research Division.	X	-	-	-	-
6. Evaluate and redesign the Grain Inspection Monitoring System (GIMS).	X	-	-	-	-
7. Implement tracking system for FGIS directives.	X	-	-	-	-
8. Provide written guidelines for correspondence upgrading.	X	-	-	-	-
9. Set-up review schedules for all FGIS handbooks.	X	-	-	-	-
10. Explore methods for the electronic dissemination of directives.	X	-	-	-	-

C. Improve FGIS revenue and investment structure.

Champion: Robert "E" Soderstrom - Director, Resources Management Division

Strategy - Through reviews, compare alternatives to existing systems, adopting better systems/programs.

Initiatives	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Conduct a review of the current fee and revenue structure.	X	-	-	-	-
2. Conduct a review of existing investment of retained earnings program.	X	-	-	-	-
3. Develop, for use by designated official agencies, a series of management approved promotion efforts for enhancing business.	X	-	-	-	X

D. Improve quality of budget execution and accounting services.

Champion: Robert "E" Soderstrom - Director, Resources management Division

Strategy - Develop highly analytical budget staff and implement more effective system of tracking costs. Provide more training and promote use of computer software packages.

GOAL III

G. Optimize productivity for Compliance Division reviews and investigative programs.

Champion: J.T. Abshier - Director, Compliance Division

Strategy - Conduct a series of reviews and analyses, and initiate appropriate changes in procedures and methods.

Initiative	Proposed FY Startup and Accomplishment				
	FY89	FY90	FY91	FY92	FY93
1. Streamline compliance review reports.	X				
2. Conduct an analysis of the civil penalties program to effect more timely action.	X				
3. Develop standard penalties (precedents) for certain types of violations.			X	- - - - -	X
4. Evaluate management evaluation concept for compliance review.	X	- - -	X		
5. Use revised standard operating procedures in internal guidelines to conduct investigations and to develop reports.	X:	Ongoing			
6. Improve CP review follow-up procedures.	X	- - -	X		
7. Incorporate all FGIS review follow-up under the management control program.			X	- - - - -	X

Senator DASCHLE. The grain trade, particularly handlers and operators, tell us that, the letters that they have sent to us, that there are really no grain quality problems today. They are very defensive about this. There are few official complaints we are told, but even those complaints are typically found invalid. While we do not question the data, we do question the logic of the argument, since the current standards allow high levels of damaged and defective grain and inspection certificates issued at origin and not destination. What is your assessment? Is there a problem?

Mrs. SMITH. Let me make a comment, and then I will ask Mr. Galliard to give you additional specifics. I would concur with the statements that you have made that our complaints are minimal. I think that part of this probably comes from the fact that we are becoming more concerned about food safety all over the world. I think it will be an issue that will be a great deal more highlighted from now on than it has been in the past. I think that all countries are beginning to understand how to bid on product, on grain. I think they will be more specific in the future. I think that will hold true for Public Law 480 programs. I think that is healthy as we want to make sure that we do place into that supply line, into that consumption line, a quality product.

Senator DASCHLE. So I think I hear you saying yes, in your view there is a problem today?

Mrs. SMITH. Well, I do not think it is. I think in any commodity there are areas we should review. I am saying that if we are going to sell any commodity, and certainly grain is a commodity that we want to market, then we need to look at and identify upfront any concerns that the customer has and satisfy him. If it is 1 percent of the trade, satisfy it. If it is 20 percent of the trade, address that issue because we want to remain competitive in the world market, and you do not keep a customer even if he is 1 percent of the trade if you do not satisfy him.

Senator DASCHLE. I still, I think I heard yes. Did I hear a yes?

Mrs. SMITH. I do not really think that I can say yes. As far as the assessment that we have on record, I cannot say to you that complaints by 1 percent of the grain trade is a big factor.

Senator DASCHLE. Do we know that it is 1 percent?

Mrs. SMITH. I will say to you that I am as concerned about satisfying that 1 percent as I am that 99 percent because someone else is going to get that customer. I think that we have to be able to market what our customers want. We have to provide them with a quality product, whatever that quality is, and help them understand our standards. I think there is a problem because they may not always know what they are buying.

Senator DASCHLE. Mr. Christenson.

Mr. CHRISTENSON. Senator, I was listening to this discussion, and I was thinking what might be a very useful exercise would be for me to ask my staff to go over the past 2 or 3 years and identify each of the quality issues that has arisen in the Public Law 480 program and what the eventual resolution was. That might be a very useful exercise for us and to see what level our issues are.

Senator DASCHLE. Well, if you can enlighten us in that regard, I assume you are saying for the record, and share the data with us, that would be very helpful.

[Grain Quality Complaints, information subsequently supplied by Mr. Christenson, AID, follows:]

GRAIN QUALITY COMPLAINTS

AGENCY FOR INTERNATIONAL DEVELOPMENT,
Washington, DC, March 13, 1990.

The Honorable THOMAS DASCHLE,
Chairman, Subcommittee on Agricultural Research and General Legislation, U.S.
Senate, Washington, DC.

DEAR SENATOR DASCHLE: As I proposed during your hearing on grain quality standards on February 8, 1990, I have asked my staff to research complaints about the quality of grains provided under P.L. 480 programs. I hope that the following summary of grain shipments for the past 3 fiscal years will prove helpful to you as you continue to explore the complex issues related to U.S. grain quality.

During fiscal years 1987, 1988, and 1989, slightly more than 18 million metric tons of grains and oilseeds were shipped to developing countries under Title I and Title II of P.L. 480 and Section 416(b) of the Agricultural Act of 1949. Commodities shipped included wheat, corn, grain sorghum, soybeans, and rice. During that period, FY 87 through FY 89, the only significant complaints about U.S. grain quality were received from four countries with regard to about 240,000 tons of corn, wheat, and rice.

A closer examination of the specific cases and their eventual resolutions indicates that circumstances other than what one might consider a "grain quality problem" were at the heart of the complaints. Brief summaries of the documented cases in which recipient countries have formally complained about U.S. grain are presented below.

P.L. 480 TITLE II AND SECTION 416 CORN TO GUATEMALA

In 1987, a complaint was received from Guatemala about suspected aflatoxin contamination of two separate shipments of corn, totaling 330 metric tons, destined for use in PVO programs. When inspected upon arrival in Guatemala, 17 bags of corn (from a total of 1,000 bags) were found to have been water-damaged during ocean transit. These bags were subsequently sampled by a Guatemalan organization and found to contain aflatoxin.

Samples from these bags were forwarded to the Federal Grain Inspection Service (FGIS) in Washington, D.C. for aflatoxin analysis. Of five samples, two were determined to exceed levels set by the Food and Drug Administration (FDA) for human consumption. Although samples were within FDA standards for animal feed, to ensure the integrity of U.S.-supplied corn, the tainted bags were destroyed in accordance with FGIS procedures.

Additional testing was done on official file samples from the two shipments, and no aflatoxin was found to be present. The balance of the cargoes, which was not water-damaged, was also tested and found to contain no aflatoxin. All bags which were not water-damaged were certified fit for human consumption and accepted by both the PVO's and the Government of Guatemala.

P.L. 480 TITLE II WHEAT TO ETHIOPIA

Two separate quality issues related to several shipments of wheat were raised by the Government of Ethiopia in 1988. The first issue involved 9,000 metric tons of wheat to be used as repayment to the Food Security Reserve of the Ethiopian Relief and Rehabilitation Commission to replace stocks which had been borrowed by three PVO's to fulfill emergency feeding program requirements. The repayment wheat was initially rejected on the basis of allegedly excess levels of shrunken and broken kernels.

A second issue which arose during the summer of 1988 involved the presence of weed seeds in U.S. wheat provided to PVO's for humanitarian feeding projects. Although the weed seeds in question were common to major wheat producing areas of the world and impossible to remove to zero tolerance in the quantities sent to Ethiopia for human consumption, the Government of Ethiopia quarantined several shipments and required that the wheat be cleaned prior to distribution. As a result, all shipments of U.S. wheat to Ethiopia were suspended in December, 1988. It should be noted that between 1978 and 1988, over 1 million metric tons of U.S. wheat was shipped to Ethiopia with no quarantine problems.

At the request of AID, USDA dispatched a team to Ethiopia to investigate and resolve these problems. The delegation discovered that the complaint of excessive shrunken or broken kernels came about due to differing testing procedures employed by FGIS and Food Security Reserve inspection personnel. While U.S. testing procedures follow objective criteria in determining shrunken and broken kernels through use of a slotted sieve, the Ethiopian procedures used a different sized sieve and subjective visual inspection procedures to determine broken and shrunken kernels.

Further testing in Ethiopia by the USDA delegation revealed that the U.S. wheat did meet or exceed standards for U.S. No. 2 wheat. When the differences in testing procedures were brought to light and U.S. wheat was determined to be suitable for milling purposes in Ethiopia, the Relief and Rehabilitation Commission agreed to accept the U.S. wheat as repayment for the Food Security Reserve.

The weed seed quarantine proved more difficult to resolve. Based on their observations and discussions in Ethiopia, the USDA delegation recommended that the weed seed prohibition imposed by Ethiopian plant protection authorities should apply only to wheat imported for propagation in Ethiopia and not to wheat for human consumption. In response, the Ethiopian Ministry of Agriculture suggested that future shipments of U.S. wheat to Ethiopia be limited to no more than 1 percent dockage, thereby limiting the risk of introducing noxious seeds into Ethiopia. This step had, in fact, already been taken by USDA in response to the problem. However, an Ethiopian requirement that all wheat which had been delivered be cleaned prior to distribution was maintained. The AID Mission contracted to have the wheat cleaned and it was subsequently distributed for human consumption. Due to the revised instructions issued for dockage limits in wheat to Ethiopia, the suspension of wheat shipments to Ethiopia was lifted and such incidents have not been repeated.

SECTION 416 CORN TO INDIA

A complaint was received from the National Agricultural Cooperative Marketing Federation (NAFED) of India with regard to alleged aflatoxin contamination of four shipments (200,000 metric tons) of U.S.-donated corn, 90 percent of which was to be used in livestock feeding. All the corn had been tested upon export by FGIS and shown to contain less than the FDA guideline for safe human consumption (20 ppb). Testing conducted by NAFED upon arrival of the corn in India was alleged to show contamination as high as 170 ppb.

A team of officials from USDA met with officials of the Government of India to determine the facts and exchange information on U.S. sampling and testing procedures for aflatoxin and FDA guidelines. In addition, FGIS retested samples taken at the time the corn was loaded. The retesting showed that all samples met the FDA guideline of 20 ppb or less. The difference in U.S. and Indian testing could not be explained, particularly since the moisture level of the corn remained virtually the same as at loading, which was far below levels needed to sustain the spread of aflatoxin.

Upon retesting of a larger number of samples of corn by an independent Indian laboratory, all samples were determined to be well within the allowable limits for livestock consumption. Most of the samples were, in fact, well below the allowable limit for human consumption. In samples taken from one ship, however, levels were suitable only for livestock consumption. Distribution of the corn by NAFED was accomplished accordingly.

P.L. 480 TITLE II RICE TO LIBERIA

Under its FY 1990 P.L. 480 program, Liberia requested 60 percent parboiled rice and 40 percent milled rice. Upon arrival of the rice in Liberia, displeasure was expressed with the color ranges of the parboiled rice. Approximately 3 percent of the parboiled was of a darker color and was deemed less desirable by rice dealers and more difficult to sell.

The color ranges for standard U.S. No. 5 white milled rice with 20 percent broken and U.S. No. 5 parboiled rice are not identical. We believe this may have resulted in confusion due to a misconception on the part of the Liberians about the exact specifications of the rice they requested.

The final resolution of this case has not yet been determined. AID and USDA are closely coordinating the issue with the Government of Liberia. An FGIS rice inspector plans to visit Liberia later this month. Several options are being considered in order to avert this type of confusion in future transactions. One option would be to provide U.S. Grade No. 2 or No. 3 parboiled rice rather than No. 5. This course of

action would be more expensive but would ensure the provision of rice to which the Liberians are accustomed. Another possibility would be not using parboiled rice at all in Title II sales programs, particularly if it is determined that using this type of rice would ultimately produce a negative impact on such programs or on the perceptions of recipient countries about U.S. rice quality.

From these examples, it appears that when there are complaints about U.S. grain quality under food aid programs, they often stem from unclear communication or a lack of understanding of the commodity specifications included in food aid agreements. In summary, I have been pleasantly surprised to discover that quality complaints are few and far between, and that most of the complaints we have received have been attributable to circumstances other than quality problems.

Once again, Mr. Chairman, I appreciate the opportunity to share our views with you and your subcommittee. If I can be of further assistance, do not hesitate to let me know.

Sincerely,

PHILIP L. CHRISTENSON,
Assistant Administrator for
Food for Peace and Voluntary Assistance.

Senator DASCHLE. I think, I can understand everyone's reluctance for a lot of good reasons. Mrs. Smith does not want to be quoted around the world as saying the United States has a grain quality problem, and I do not want to put her in that difficult position. I can speak up, because I honestly believe there is a problem. And you have a lot of bureaucracy with which to clear an answer like that, and I suppose it is too much to ask that you alone can speak for the entire administration in pronouncing to the world the United States has a grain quality problem.

But I do think it is important that we be upfront, and frank, and candid about assessing our situation today. The fact that we may be only addressing a small percent of the world's market in quality grain is still a problem. Similar problems resonated through other industries in the 1960's and 1970's when customers came to us and said you have a quality problem in your product, and we kept saying, no, we do not; you Mr. Customer have a quality problem in what you are looking for, and we can produce it if you are willing to pay for it. Well, that got us to the position we are in today.

And so as candidly as we can, I think we have to discuss the problems. We are not pronouncing any secrets to the world. We simply have to be as resolute as possible in addressing whatever one calls it. But let me ask you this. Regardless of the situation, do you think that having a legal mandate to address the new competitive position in the 1990's, whether it is a problem or not, would be something that would be helpful to you and to the Department?

Mrs. SMITH. Let me back up and say that in preparation of our farm bill proposals we looked at the grain issue very carefully, very hard, and extensively. The recent legislation and the studies that have been mandated by Congress have provided a very clear signal of our responsibility and the direction of how we should achieve that mandate that has been laid out previously. We would like to be given the opportunity to execute those mandates.

We feel like that we have the vehicle to address the competition and we think that we can do it through regulation. We have to be astute enough now to hear that message and to make sure it gets done, as you said earlier. That is our commitment.

Senator DASCHLE. You are a great witness because you give me an answer that covers the bases and let me just try to clarify it because the bases are covered, but we have not reached homeplate

yet. Would a mandate in any way encumber your efforts to ensure we reach the goals in the coming years?

Mrs. SMITH. My response to this question may result in your thinking that we are never going to get to homeplate, but I would say it would depend on what the mandate said, would it not? I mean in all fairness.

Senator DASCHLE. Well, let me ask you this. Are you opposed in all cases to a legislative mandate?

Mrs. SMITH. I would not say I was opposed to a legislated mandate at this time. In all fairness, I would have to look at the direction you are giving to us.

Senator DASCHLE. So philosophically the Department has no opposition to a mandate per se?

Mrs. SMITH. Well, I do not think I am. I know better than to tell Congress that they cannot do something. [Laughter.]

Remember I vote, too. And I respect the position that you are in. I hear you. We are just absolutely committed at this time to making grain quality a key issue within our agency and the Department.

Senator DASCHLE. But I have to tell you I do not see that when Secretary Yeutter comes before us and gives us this recitation, as Senator Bond said, of things that we have been doing for years. I mean there is nothing new about what he talked about yesterday, and I will be honest with you, there is very little new in what you have told me this morning that gives me any confidence, as well-intended as you may be, that we are going to see anything different a year from now, or 2 years from now, or 3 years from now.

You have had the regulatory authority for years and nothing has happened. So, now the question is what do we do about it?

Mrs. SMITH. Well, I am going to let Dave answer that because he has been here longer than I have. [Laughter.]

Senator DASCHLE. All right. Go ahead, Dave. Give it a shot. Let us see a homerun here.

Mr. GALLIART. I think my problem is I have been around too long. In a sense, we have a mandate by reason of the Grain Quality Improvement Act of 1986. If you will recall, there are a couple of specifics in the act that help us on this particular issue. One is the mandate that was handed down to us to rearrange our objectives and the standards. If anything should provide us with motivation it is that. Not only are we mandated to facilitate trade by having the kind of standards and limits that are necessary, but a mandate to provide information on storability, and to provide information on end-use, which is something we have never addressed in the past.

Senator DASCHLE. Excuse me. Where did you say that mandate came from?

Mr. GALLIART. The Grain Quality Improvement Act of 1986.

Senator DASCHLE. I think the important part of that title is the year, 1986. It is now 1990, and if that was a mandate, you cannot help but understand the frustration, perhaps the impatience after 3 years of waiting. I mean how does one determine a mandate? I mean if a mandate is to do something without any timeframe, we could be around here in the year 2000, the year 2010, saying, well, we had a mandate back in 1986 to address this issue, and by golly, we are working on it. What about a mandate that would give you

the confidence that you now have more of an incentive than you did in 1986 to address this issue?

Mr. GALLIART. There are a couple of things that I think represent material changes. One is technology. Many changes have been implemented by reason of research. The matter of aflatoxin testing is an example. There was a time when aflatoxin testing had to be performed in a laboratory. It is a very sophisticated test. We now have a very quick field test by reason of research. We are now looking at the remaining mycotoxins, and quick tests for those. Hopefully, in the not too distant future, we will be monitoring pesticide residues, all dealing with wholesomeness or purity in grain, which in part, represents the mandate that we received in 1986.

If we move to other identifications of quality, that is, to the physical condition of grain, we made some changes in dockage in wheat. We have reduced or changed the interpretive line for damage in soybeans. In corn, we are looking at the factor of broken corn and foreign material. We will be happy to submit to you a list of the initiatives that we have in place now and the initiatives that we are planning.

Senator DASCHLE. That would be helpful.

[Significant Grain Quality Initiatives Completed Since 1986, information subsequently submitted by Mr. Galliart follows:]

SIGNIFICANT GRAIN QUALITY INITIATIVES COMPLETED SINCE 1986

Revised the interpretive line for mold damaged kernels in soybeans to coincide with the National Soybean Processors Association and the Federation of Oils, Seeds, and Fats Association trading rule of 0.75 percent free fatty acid (August 1, 1986).

Required dockage in wheat to be reported to the nearest one-tenth of a percent (May 1, 1987).

Required wheat protein to be reported on a constant moisture basis of 12.0 percent (May 1, 1987).

Improved the wheat protein monitoring program (May 1987).

Amended the regulations under the U.S. Grain Standards Act to prohibit recombining or adding (1) dockage or foreign material to any grain, and (2) dust removed from grain collected into a bin at export elevators at export port locations (June 30, 1987).

Amended the barley standards by revising the definition of Sample grade, damaged kernels, and classes of malting barley; and by revising certain names of terms relating to damaged or injured kernels (June 30, 1987).

Amended the corn standards by including definitions for the components of broken corn and of foreign material (July 30, 1987).

Revised the inspection procedures to improve the detection of treated seeds in export shipments (September 4, 1987).

Tightened the insect tolerances in wheat by establishing a limit on insect damaged kernels: 32 insect damaged kernels in 100 grams (May 1, 1988).

Provided for the determination of shriveled and wrinkled soybeans in response to drought conditions (September 16, 1988).

Expanded the availability of aflatoxin testing services to include export soybean, wheat, and sorghum shipments (November 15, 1988).

Developed uniform procedures for determining TCK smut analysis in wheat (January 4, 1989).

Revised the falling number (FN) testing procedures to better determine uniformity of export shipments by offering FN based on the averaging of sublots (January 11, 1989).

Revised the aflatoxin testing procedures to detect aflatoxin at levels of 10, 100, 200, and 300 parts per billion (January 12, 1989).

Developed and implemented new calibration for nuclear magnetic resonance (NMR) instruments used to determine oil content in sunflower seed (February 22, 1989).

Developed an interpretive line slide for mold damaged kernels in sunflower seed (February 1989).

Evaluated the effects of combining dockage and foreign material in wheat as a single grade factor (June 1, 1989).

Established soybean oil and protein testing as an official criteria (September 4, 1989).

Approved and implemented commercially available aflatoxin test kits for official use (October 1, 1989).

CURRENT AND PLANNED GRAIN QUALITY INITIATIVES

Redefine the class White wheat into two classes: Hard White wheat and Soft White wheat.

Survey the wheat, corn, and soybeans for the presence of chemical residues.

Establish and implement a test for wheat hardness.

Develop an objective method for determining odor in grain.

Develop an objective method for detecting hidden insect infestation in grain.

Develop a single kernel moisture determination device.

Develop an objective method for the classification of wheat.

Improve the manner in which dockage in wheat is determined.

Develop new methodologies for quantifying the presence of aflatoxin in corn.

Develop a device for determining the breakage susceptibility of corn.

Redefine broken corn and foreign material based on nutritive value of grain.

Develop calibration constants for near-infrared reflectance (NIR) instruments for measuring starch, oil, and protein in corn.

Determine the toxicity of five common types of weed seeds in soybeans.

Determine the nutritive value of shriveled and wrinkled soybeans.

Revise the sorghum standards to establish separate grade limits for broken kernels and foreign material, and reduce the percentage of brown sorghum kernels allowed in yellow sorghum.

Develop calibration constants for NIR instruments for measuring protein in barley.

Develop official standards for rapeseed/canola.

Revise, to improve, the shiplot inspection plan used to determine the quality of export shipments.

Study the impact of establishing grading factors for broken corn and foreign material in corn.

Conduct a general review of the wheat standards during fiscal year 1990.

Conduct a general review of the corn and sorghum standards during fiscal year 1991.

Senator DASCHLE. Just let me comment on one of the last things, and then I am going to ask Senator Kerrey for his questions. I will have a couple more after he finishes. You said you are looking at broken corn and foreign material. Is that the result of this mandate, to be looking at broken corn 3 years later? I would have hoped you could have looked at it and addressed it. What did Senator Bond say, analysis brings paralysis. I mean we have been analyzing this thing for a long period of time. In fact, we are analyzing it again today.

The real question is what is it going to take for this country to come to grips with some of these problems and devote the kind of attention necessary to make some fundamental change?

Senator Kerrey.

Senator KERREY. I get the same sort of argument from handlers and exporters that there really is not a problem. It seems to me as I hear the arguments that they feel that blending of defective or lower quality grain is necessary in order for them to be able to market that grain. They have lower quality grain they want to sell, and blending helps them market the product. I simply disagree. I have a disagreement with that because I think what that does is it puts the farmer in a position of being penalized for producing a quality product.

It must, in the end, reduce the price that that farmer is going to get. So I ask you directly, do you see that as a problem? Do you see the blending of defective and lower quality grain as a problem, and are you prepared to take action to eliminate it?

Mrs. SMITH. Well, certainly there has been some action taken that penalizes certain blending practices. The question that you are asking is, are the current standards the ones that really are needed to address blending? I think this is a valid question. Certainly it goes back to what the farmer is paid and whether we are producing what the trade wants. Blending has been an institution within the grain trade. I am sure that we all concur that blending a No. 2 corn and No. 3 corn produces a very high quality product.

I think your key question here is the lower quality product. There are rules that prohibit certain types of blending. Dave, do you want to address that?

Senator KERREY. No; let me just say the exporters and handlers will tell you they have a damaged and defective grain, and they are blending it with higher quality grain in order to market the inferior grain. I say they should not be permitted to do that. And they say they have to do it in order to get rid of the grain, and my question is do you see that as a problem that needs to be either eliminated or substantially reduced?

Now I do not accept the handler and exporter's argument that, gee, we have to do that in order to be able to get rid of this stuff because otherwise we are not going to dispose of the stuff. There is no market for the damaged and defective product. It seems to me if that is the case, then maybe we should orient our farm program so that people are rewarded for producing quality and penalized for producing stuff that is not of sufficient quality. We have to pursue this thing and resolve what seems to me is a crazy conflict with reality. Customers will buy and pay more for a higher quality product. It seems to me that is a reasonable generalization. Yet we are permitting blending, right now permitting exporters and handlers to blend defective and lower quality product.

I say we should not permit them to do it. And my question to you, Mrs. Smith, is do you agree with me or do you agree with the handlers?

Mrs. SMITH. Obviously we need to be very careful about the percentage of defective and damaged product that is allowed in the contract for that sale. I know that we are taking action to make sure that people understand what they are purchasing. The contract determines the quality of product. The exporter or handler provides to the buyer the quality stipulated by the contract.

Senator KERREY. You know I like you, do you not? [Laughter.]

Mrs. SMITH. I like you, too.

Senator KERREY. Do you not?

Mrs. SMITH. Well, come at me again.

Senator KERREY. I take from your answer that you disagree with me. I take from your answer that USDA's position is that they are not prepared to be more aggressive in reducing or eliminating a practice that I identify as a problem and that the handlers identify as a business necessity?

Mrs. SMITH. Well, what I want to leave with you is something that has, since I have been here, been discussed a great deal, and

to say that we have at this point in time a position to move in one direction or the other, we do not. But I can assure you of two things. One, the marketplace is going to determine a lot of this because there is a lot more competition in the marketplace today than there was.

Senator KERREY. Oh, I'll say.

Mrs. SMITH. And having been through it on another side with another commodity in the real business world, I can tell that you will respond to the marketplace. Legislation and regulation will not always do it for you. The consumer can do it for you. I think that handling is an issue, but I would not sit here and give you a black and white answer. I am not trying to be evasive.

Senator KERREY. The problem that I see is that our competitors' governments have taken action to guarantee a higher quality product than ours has. I quite agree with you. In fact, I think the market is already adjusting, only against us, which concerns me. And as I said, I am not prepared to deal with this thing out of the context of the rest of the problem of competitiveness. I am prepared to declare that we ought to put a premium on a quality product. And if the producer delivers a product that is not high quality he should not, in my judgment, receive the same benefit as somebody who is producing the lower quality product.

But I hear you saying that USDA has not identified blending as a significant problem. I hear you saying that the marketplace itself will take care of that, and I want you to understand that I am saying that I think USDA needs to be much more aggressive, and that is the genesis of this bill. The origin of the bill is a perception that the marketplace is not taking care of the problem, or if it is taking care of it, it is taking care of it in a way that disadvantages our producers.

Mrs. SMITH. I hear you.

Senator DASCHLE. I would only add, the reason I shook my head, Mrs. Smith, is that working in a vacuum you are probably right. In fact, you are right, but we are not working in a vacuum. We have policies in place that, to a large extent, dictate the actions of the grain companies, dictate the actions of the producers, and allow, for example, producers to plant for quantity rather than quality. The problems extend all the way through the system. We have a quantity-based policy orientation. And as long as that policy is in place, without any mandate that it be changed, my view is that the marketplace cannot totally compensate for whatever deficiencies our country finds itself in today. Would you not agree with that?

Mrs. SMITH. Well, I certainly concur with you that the grain industry, perhaps all of agriculture today, has been addressing quality. There are some very strong similarities to this and the beef industry. When there is a demand in the marketplace for a certain type and quality of product, producers react if they are paid for it.

Senator DASCHLE. Let me ask you two more questions, and then we will move on to our second panel.

The first is would you subscribe to a policy goal, whether it is mandated or regulated, that the United States meet the same quality standards as our competitors?

Mrs. SMITH. I think that we have to do that. No, there is no doubt about that. You do that in competition, and you do that in the marketplace.

Senator DASCHLE. And you would agree today that we do not have the same quality standards?

Mrs. SMITH. I personally cannot give you that answer because it is a question of whose quality?

Senator DASCHLE. Well, I mean just looking at the tolerance levels and the standards that are set officially. I think it is a given. It is not even conjecture that we do not meet the international quality standards of our competitors. Mr. Galliard, you would share that observation; would you not?

Mr. GALLIART. There is no question that Canada through a government policy, enforces the cleanliness of grain.

Senator DASCHLE. By policy.

Mr. GALLIART. That is true. We do not in the free trade system that we have in this country.

Senator DASCHLE. That is correct. That is right. That is a very important point. The second question I would ask: is it possible to design a shiploading and sampling plan that is equally fair to the buyer and the seller?

Mr. GALLIART. We think so. We are getting ready to publish a revision of our present plan. We have worked with several statisticians to set up a plan that is as fair as it can be to both buyer and seller. When that plan is published, we would be happy to come up here and explain it to you.

Senator DASCHLE. When will it be published?

Mr. GALLIART. Hopefully within the next month.

Senator DASCHLE. Do you have confidence—you have obviously had a good deal to do with the plan—do you have the confidence that it will attain that goal?

Mr. GALLIART. I have confidence in the plan, that it will—

Senator DASCHLE. Will it be equally fair to buyer and seller?

Mr. GALLIART. It will be as reasonably fair to the buyer as it possibly can be.

Senator DASCHLE. That is not what I am asking.

Mr. GALLIART. That is the best answer I can give you.

Senator DASCHLE. What I hear you say is no, that you do not think, you do not have the confidence that it will be equally fair to buyer and seller?

Mr. GALLIART. I am not sure that I fully understand what is equally fair. The buyer does not have to use the plan. There is no mandate that our plan be used.

Senator DASCHLE. That is right. But do you know why? I mean do you know what happens then? Because he does not have to use it, you get what is happening around the country, around the world. They are going to the EC, they are going to Canada, they are going to Australia where they perceive fairly or unfairly that there is a better shot at fairness than what they find in our system. Would you not say that is an accurate perception?

Mr. GALLIART. Let me back up just a bit as far as the plan is concerned. When this plan is published, a full description and explanation of the plan will be distributed to every foreign country that buys U.S. grain. As a matter of practice, that we established many

years ago, buyers are fully informed about the plan. We believe that the plan is as close as we can possibly bring it to a uniform loading plan. There are many problems with loading grain. There is the natural phenomenon of segregation that has nothing to do with the plan—which means that the lot would not be as uniform as the buyer would expect.

Senator DASCHLE. Well, I think you have answered it. I mean in a sense what I hear you saying is that even with this plan, there is no assurance that the buyer is going to be treated fairly. You are hoping that you will achieve that goal. And you are going to share the information with prospective buyers around the world, but let the buyer beware.

Mr. GALLIART. We will let him know precisely what we are doing with regard to the plan. That is our intent.

Senator DASCHLE. Do you think that it will match the standards set by other countries with regard to fairness between buyer and seller?

Mr. GALLIART. I think it will. I am not sure I fully understand what plans are being used by other countries. I am not sure that other countries use a plan like ours. I might also say that there are buyers now who are contracting for grain from the United States and stipulating in the contract that the plan not be used and that the inspector record his actual findings on the ship loading log. Such contracts are being accepted by U.S. exporters.

Senator DASCHLE. Well, listen, I appreciate your coming today. Let me ask, if it were possible, would you be able to stay for the other witnesses or do you have business downtown?

Mrs. SMITH. I can stay for a little while.

Senator DASCHLE. What I am thinking about doing, and maybe others could come and stay in your behalf, but if we have time, I am thinking about bringing you back after the other witnesses have testified for a little bit of a roundtable discussion on some of the issues that have been raised in their testimony. But we may not have time, and we will just see how it goes. But if you could stay, you are the expert, perhaps, and Mrs. Smith, if you could stay for a little while, that would be very helpful. Thank you.

Mrs. SMITH. Thank you.

Senator DASCHLE. Our next panel of witnesses includes Mr. Michael Ageev, the Deputy Director General of the Exportkhleb, U.S.S.R.; Ivan Shestopalov, the Chief of the State Inspection and Plant Quarantine Service, in the State Committee on Food Procurement of the U.S.S.R.; Mr. Paul Vervaeke, representing FEDIOL, the European Oilseed Processors Association. He is the commercial manager of Vamo Mills in Belgium. If those gentlemen could come forth.

Gentlemen, we want to again reiterate our gratitude to you for coming so far to share your thoughts with us, to give us your counsel with regard to grain quality. In my view, as a result of developments in the last 6 months in particular, the future is very bright for U.S.-U.S.S.R. negotiations with regard to further grain trade, with regard to an even more significant relationship in the future.

It is somewhat of an historic moment for us to have you here before this particular subcommittee, and we look forward to your testimony. Mr. Ageev, let us start with you.

STATEMENT OF MICHAEL AGEEV, DEPUTY CHAIRMAN OF FTO,
"EXPORTKHLEB," MOSCOW, U.S.S.R.

Mr. AGEEV. Thank you, Mr. Chairman, and members of the committee.

SUPPLYING THE POPULATION WITH FOODSTUFFS AND CONSUMER GOODS
IS ACKNOWLEDGED AS A TASK OF PARAMOUNT IMPORTANCE IN THE
U.S.S.R.

In recent years the solution of the problem of supplying the population with foodstuffs and consumer goods is acknowledged as a task of paramount importance in the U.S.S.R. Huge sums in free currency are spent for the imports of grain. Therefore, it is natural that our Government and the general public pay such great attention to the quality of grain that we import, and it is understandable why so often we are criticized when the grain we import does not meet the requirements of our customers.

ONE OF THE MAIN SUPPLIERS OF GRAIN TO THE U.S.S.R. IS THE UNITED
STATES

One of the main suppliers of grain to our country is the United States, whose share in some years constitutes up to a half or more of our imports of this commodity. Therefore, we are extremely interested in receiving grain from the United States only of high quality.

WE WORK IN CLOSE CONTACT WITH THE USDA IN ORDER TO SOLVE THE
PROBLEMS RELATING TO THE QUALITY OF GRAIN

All these years we work in close contact with the USDA in order to solve the problems relating to the quality of grain and we are grateful to them for their assistance and efforts. In the framework of the long-term grain agreement between our countries, we hold twice a year consultations with the USDA at which a frank exchange of views takes place, and the results of the work that has been carried out are analyzed. This contributes to the improvement of the quality of grain shipped from the United States to our country.

WE MUST INFORM YOU THAT THERE STILL REMAIN SERIOUS COMPLAINTS
ABOUT THE QUALITY OF U.S. GRAIN IN OUR COUNTRY

However, we must inform you that there still remain serious complaints about the quality of U.S. grain in our country. The main problems encountered by us are connected with the insufficient cleanliness of American grain and a large percentage of broken kernels. Presence of quarantine seeds is a very serious problem, which will be dealt with in detail by Mr. Shestopalov in his testimony. Until recently the infestation of American grain was a major problem. This problem has not yet been entirely removed from the agenda.

FIGURES SUBSEQUENTLY USED IN MY TESTIMONY PERTAIN TO 1987-89

All figures that I subsequently refer to in my testimony are based on the analysis of the data pertaining to the last 3 years from 1987 to 1989.

SHIPMENTS OF U.S. WHEAT TO OUR COUNTRY SHOW A HIGHER CONTENT OF FOREIGN ADMIXTURE COMPARED TO OTHER EXPORTERS

Shipments of U.S. wheat to our country show a higher content of foreign admixture compared to other exporters, for example, in Hard Winter No. 2, the average foreign matter content is 1.7 percent whereas, in Canadian Western Red Spring, it is 0.7 percent, and in Australian Standard White, 0.5 percent.

One should note the fact that U.S. wheat is not uniform as far as this characteristic is concerned. Some shipments have arrived with foreign matter content of 0.6 percent, others with 3.7 percent. Canadian and Australian wheats are much more uniform in this respect.

QUALITY OF U.S. CORN

Now we come to quality of U.S. corn. The experience of many years during which U.S. Yellow corn No. 3 has been imported by our country shows that this commodity has not been uniform in quality.

CONTENT OF FOREIGN ADMIXTURE

The content of foreign admixture on the average was equal to 3.5 percent in U.S. corn and only 0.9 percent in Chinese. In U.S. corn, the fluctuation was from 0.7 to 10.6 percent, while in the Chinese from 0.8 to 2.2 percent.

BROKEN KERNELS

The greatest concern to our customer is caused by the content of broken kernels in U.S. corn, which on the average amounted to 9.5 percent compared to 5.6 percent in Chinese corn. The content of broken kernels in U.S. corn ranges from 1 to 33 percent.

We have to note that the high content of broken kernels leads to losses of grain during unloading and transportation, creates difficulties in the utilization of corn, reduces the output of the product. It also contributes to deterioration in the sanitary-hygienic condition of corn.

INFESTATION A BIG PROBLEM

A big problem in the past years as far as U.S. grain is concerned used to be infestation. The level of infestation fluctuated from year to year. However, on the average 10 percent of U.S. grain arrived in our ports infested with weevils.

IMPROVED AFTER 1985 WITH INTRODUCTION OF FUMIGATION OF GRAIN WITH PHOSPHINES

After the introduction in 1985 of fumigation of grain with phosphines during transportation from the United States to Soviet ports, and especially since recirculation method has been adopted

in 1987, the situation with infestation has notably improved. In 1988, the share of U.S. grain which arrived in our ports infested fell to 0.5 percent and in 1989 to 0.3 percent.

However, it is necessary to take into consideration the fact that this was the result of 100 percent preventive treatment of grain with phosphines during sea transportation. In our country, there have already been protests on behalf of seamen trade unions, long-shoremen, grain inspection officials who referred to the hazards for their health of this means of grain fumigation and even the threat of boycott of such shipments. Therefore, we count on the American side to work on measures which will ensure the arrival of grain to our ports free of infestation without our having to fumigate the grain en route.

As an example, Australia, a country with hot climate, organized the shipments for export in such a way that infestation of grain is nonexistent, and there is no need to fumigate it en route. It goes without saying that the problem of infestation of grain does not exist in Canada or Europe.

IT IS VERY IMPORTANT THAT THE ABOVE PROBLEMS SHOULD BE SOLVED
BY THE AMERICAN SIDE

It is very important that the above problems should be solved by the American side. The problem of imports of grain is very sensitive in our country. There is growing discontent in the U.S.S.R. about the high volume of our imports of grain. This question attracts great attention in our press. It is debated in our parliament. The reflection of these sentiments is the experiment, which is being carried out in our country since the fall of last year, on purchases of grain, pulses and oilseeds from our agricultural enterprises for free currency with the aim of ensuring greater self-sufficiency in these products.

In these conditions, it is especially important that the imported grain is delivered only of excellent quality, and the countries which can ensure such quality will have an advantage. We expect that in the nearest years our imports of grain will begin to decline, and if there is no improvement in the quality of U.S. grain, this reduction will be to a great extent at the expense of U.S. grain, as we shall be compelled to seek every opportunity to switch our purchases to other countries.

In conclusion, I would like to thank the Senate subcommittee for the fact that it has considered it possible to invite us to take part in this hearing. This is a great honor for us. The proposed Grain Quality Incentives Act, if adopted and carried out, should in our opinion solve many of the problems mentioned by us. We are confident that if such a high body is taking up the problem of quality of U.S. grain, the positive effect is assured.

Thank you.

Senator DASCHLE. Thank you, Mr. Ageev. We normally do not handle indictments in this committee, but that is about as close to an indictment as I have heard in testimony for some time. Mr. Shestopalov.

[The prepared statement of Mr. Ageev appears at the conclusion of the hearing.]

STATEMENT OF IVAN SHESTOPALOV, CHIEF, STATE INSPECTION AND PLANT QUARANTINE SERVICE, MOSCOW, U.S.S.R.

Mr. SHESTOPALOV. Mr. Chairman, members of the committee, I would like to express my thanks for this unique opportunity to testify here before your respected subcommittee.

PLANT QUARANTINE ISSUE

Let me draw your attention to the plant quarantine issue.

Plant quarantine problems in connection with the shipment of U.S. grain (wheat, corn, soybean) to the U.S.S.R. existed for more than 20 years, ever since the very first shipments of the grain took place. In the course of many years, the appropriate state services of both countries, as well as the supplying grain companies, made every effort to solve these problems.

Particularly, they tried to eliminate the differences existing in the state standards on grain currently in force in the U.S.A. and U.S.S.R., for the purpose of standards' unification as to the main grain characteristics, and bringing closer the requirements issued by the importer and the exporter as well. There was carried out a series of joint experiments on disinfection of grain onboard of the ship en route, aiming at the selection of the most effective fumigants and improving on the fumigation technology to make it safe for the crew. Scientific research was undertaken for the development of equipment for early detection of hidden infestation of grain before loading in the U.S.A. seaports, to prevent the entry of the infested grain into the Soviet ports, because during the shipment of grain from the U.S.A. to the U.S.S.R., the hidden infestation shows up, and while not being detected by the inspecting personnel of the Federal Grain Inspection Service (FIGS) at loading, it is later detected by Soviet inspectors at unloading. The infested grain had to be exposed to fumigation in the Soviet ports of entry, which resulted in the demurrage of ships and unjustified expenditures.

NEW TECHNOLOGY OF GRAIN FUMIGATION

As a result of joint efforts, the American and Soviet sides managed to solve the problem of grain infestation developing the new technology of grain fumigation carried out onboard of the ship en route, applying chemical compounds releasing gas phosphine. Although the new technology still has a definite safety problem, it now works and has been used in grain shipment practice for several years—a good example to successful solution of mutual problem.

PROBLEM OF CONTAMINATION OF GRAIN WITH SEEDS OF QUARANTINE WEEDS

However, one more important quarantine problem in connection with shipments of U.S. grain to the Soviet Union remains unsolved so far. It concerns the contamination of grain with seeds of quarantine weeds, which results in the their spread all over the territory of our country, which may be the source of the infestation of the agricultural lands.

According to the data received from the State Service and the All-Union Research Plant Quarantine Institute, 95 percent of the

total amount of the U.S.A. grain delivered into the U.S.S.R. in 1989 appeared to be contaminated with quarantine weed seeds not registered in the U.S.S.R. territory; in 1988 contamination was equal to 77 percent; in 1987, 88 percent; in 1986, 100 percent; in 1985, 95 percent et cetera.

WEED SEEDS IN U.S.A. GRAIN

Judging by the results of random testing of the U.S. wheat in the seaports of Odessa, Tallinn and Nakhodka during 1980-87, there were found 78 species of weed seeds, including 23 species being found regularly and 20 species which earlier were absent on the U.S.S.R. territory. In corn there were found up to 30 species of weed seeds, 14 species out of these 30 species being found regularly. In soybean, there were found 66 species of weeds, among which 12 species were being found regularly.

Thus, within the mentioned period, in the U.S.A. grain there were found 100 species of weed seeds, most of which were considered absent on the U.S.S.R. territory. Wheat and soybean were contaminated more than other grains. One should note that all the above-mentioned grain was certified by the American side as absolutely free of quarantine weeds.

DIFFERENCES EXISTING IN EVALUATION OF QUARANTINE CONDITIONS OF GRAIN BY THE SOVIET AND AMERICAN INSPECTION SERVICES CONTINUE

Differences existing in evaluation of quarantine conditions of grain by the Soviet and American inspection services continue since the first shipments of U.S. grain into the U.S.S.R. took place. It can be explained by different approaches, different methods of grain testing, and by different interests pursued by each side. The Soviet side in accordance with the contracts concluded on grain shipments requires absolute absence of seeds of quarantine weeds in grain, that is zero tolerance. The American side exporting different categories of grain to the U.S.S.R., like Winter Wheat No. 2, American Yellow corn No. 3 and soybean, cannot guarantee absolute absence of quarantine weeds, but in order to provide certification of grain consignments in accordance with the contract requirements, issues the phytosanitary certificates, saying that the grain is completely free of all species of pests and weeds specified in the contract. Otherwise, it is impossible to issue the certificate, as it is prohibited by the U.S. legislation.

SYSTEM OF GRAIN INSPECTION

The system of grain inspection existing nowadays in the U.S.A. allows this kind of certification of grain going for export. For this reason, the Animal and Plant Health Inspection Service, which is the only competent State Service authorized by the U.S. Department of Agriculture to certify the grain in phytosanitary respect, does not participate in the process, and there are no specialists on weeds in the ports of loading who could have provided a qualified conclusion in each case of grain shipment. This kind of conclusion may be issued by the seed testing laboratories, which are unfortunately very few in the United States and which are situated a long way off the seaports.

CONTAMINATION SOLUTION

The solution of the problem of the contamination of the American grain exported to the U.S.S.R. with quarantine weeds, along with the other problems on quarantine conditions of grain, to our opinion, might be achieved by unification of the inspection and certifying systems of the two countries, and as a result of it signing an agreement on plant protection and quarantine between the authorized services of the U.S.A. and the U.S.S.R., allowing the exporter to promptly regulate all quarantine problems and certify the real quarantine conditions of the exported grain as well as allowing the importer to give more trust to U.S. phytosanitary certificates and be more confident not to contaminate our land with the harmful objects.

We have good experience of solving the quarantine problems in grain shipment practice along these lines with many countries including Canada, France, China, and others. It is our mutual interest to use that experience in a proper way in order not to jeopardize long-lasting cooperation between the inspection services our two countries aiming to improve the quality of grain and not to block the grain export due to quarantine reasons.

Thank you.

Senator DASCHLE. Thank you, Mr. Shestopalov. Mr. Vervaeke.

[The prepared statement of Mr. Shestopalov appears at the conclusion of the hearing.]

STATEMENT OF PAUL VERVAEKE, CHAIRMAN, SOY WORKING GROUP OF FEDIOL, IZEGEM, BELGIUM

Mr. VERVAEKE. Mr. Chairman and members of the subcommittee, I thank you for the opportunity you have given also to your foreign customers to testify today on the subject of grain quality.

FEDIOL REPRESENTS THE EUROPEAN OILSEED PROCESSING INDUSTRY

My association, FEDIOL, represents the European oilseed processing industry, and our members crush about 326 million bushels of soybeans a year.

IMPORTING

We import half of this quantity from the United States and the other half from Brazil and Argentina.

Hence, you will understand that our industry is in a good position to judge on quality differences between various origins of soybeans, and we welcome you to share our experience.

OUR OPERATIONS ARE DOMINATED BY THE REALIZATION OF A FAIR GROSS CRUSHING MARGIN

Our operations are dominated by the realization of a fair gross crushing margin. This margin not only depends on the relative value of the three items of the soya complex, beans, soybean meal and soybean oil, but depends to a large extent also on the quality of the soybeans.

Now I would like to go more into detail about the quality of U.S. soybeans and the way it affects our gross crushing margin.

FIRST, OIL CONTENT

First of all, the oil content. Most of the time there is a premium in the price structure on soybean oil compared to soybean meal. Hence, our interest to crush soybeans with a high oil content. The oil content of U.S. soybeans has ranged between 18 percent and 19 percent this crop-year. It is clear that it has quite a financial consequence for the crusher when crushing soybeans with 18 percent oil content compared to when crushing soybeans with 19 percent oil content, knowing that he has paid the same price for these beans. Fortunately, the FGIS now offers the soybean oil testing. This should be made mandatory and completed by a full oil content guarantee.

SECOND, FREE FATTY ACIDS (FFA) OF THE SOYBEAN OIL

We guarantee our customers a free fatty acid (ffa) content of 0.75 percent. Above this level they claim an allowance because their refining losses become too high. The high ffa content also influences the shelf life of the bottled oil.

The high ffa content is often the result of a combination of high moisture content and damaged soybeans.

Therefore, it is essential to receive soybeans with a limited ffa content.

A guarantee of 0.50 percent ffa would allow us to work within the limits.

THIRD ELEMENT IS THE PROTEIN CONTENT

The next quality factor that plays an important part in our appraisal of the origin of the soybeans is the protein content. Like in the United States, Europe faces a growing demand for poultry meat. This means higher protein and lower fiber requirements in the animal feed. Hence, an increasing demand for high protein soybean meal.

The protein content of U.S. soybeans has ranged from 49.85 percent to 52.75 percent this crop-year.

Our industry faces hard times to meet the quality requirements of our customers in the animal feed industry when using beans from the United States. We guarantee a 49 percent protein and fat content, and we need soybeans with at least 53.40 percent protein (dry basis) to reach these specifications.

We appreciate that the FGIS service offers us a soybean protein testing. We urge that the service should become mandatory and that a guarantee for a minimum protein content should be introduced. This should be an incentive for farmers to produce soybeans with a higher protein content.

THE THREE MAJOR QUALITY ITEMS FOR SOYBEANS

These are the three major quality items for soybeans: oil content, free fatty acid content, and protein content.

INTERMEDIATE REMARK

In order to regain or strengthen the export position of the U.S. producers, compared to the other exporting nations, we believe it is

of utmost importance to reduce the quality gap in oil and protein content.

Let us continue to examine the parameters and try to find if there is any relation with the first ones:

FOREIGN MATERIAL CONTENT

The official grain grading system offers us the possibility to buy on a maximum of 1 percent, 2 percent or 3 percent content. But there is no obligation for the shipper to reach that maximum. The quality certificate issued at shipment by FGIS seldom reflects the real quality on arrival. This seems to be a problem of sampling procedures.

It was very amazing and contradictory for us to see that farm organizations and public authorities tried to increase the quality of their soybeans, whereas grain merchants made large investments to do the opposite and have installed export shipping bins and other equipment to arrange for shipments, always reaching a maximum limit on foreign material.

We are not in a shortage of foreign material in Europe. [Laughter.]

Mr. VERVAEKE [continuing]. And it is a pity that one should transport such quantities of waste across the ocean.

Lately, we have discovered that some new procedures seem to be used that allow large quantities of grain dust and fine foreign material to be included in export shipments. In particular, we mean a combination of fast-going transport belts and small sample openings which obviously guarantee little dust and no big straws in the samples.

It hinders our cleaning operation. It hinders our storage capacity. It hinders our crushing operations, and it is finally detrimental to the quality of the end-product.

But far more important is the fact that every additional 1 percent of added foreign material reduces the oil content by 0.20 percent and reduces the protein content by 0.40 percent. So this definitely proves that there is a relation between foreign material on one side and oil and protein content on the other side.

SECOND ELEMENT, DAMAGE

As far as damage is concerned, we are glad to inform you that there have been no problems with this crop-year.

However, we believe that the damage factors and tolerances in the U.S. standards are too generous for export shipments. We often have noticed that soybeans with a higher damage level cannot endure transport across the ocean. The damaged beans degenerate the quality of the whole cargo during the voyage and finally the overseas customer receives off-grade soybeans.

It goes without saying that some kinds of damage combined with a high moisture content are extremely harmful to the quality of the soybeans.

We propose that the total damage content should remain unchanged and limited at 3 percent, but that there be a maximum of 1 percent for each separate type of damage.

THE NEXT POINT: MOISTURE CONTENT

We have already mentioned this topic when discussing the free fatty acids and damaged beans.

The high moisture content accelerates the degeneration process of damaged beans and increases the free fatty acid content in the oil, even of sound beans. This process is stimulated in the ships' holds during ocean voyage, especially when there are concentrations of high moisture beans within a shiplot of average-moisture material.

A moisture guarantee of maximum 14 percent is high. We urge you, however, to see to it that no soybeans with a higher moisture content than 14 percent should be used to be mixed with others, but that these high moisture beans should be conditioned first in a proper way.

FOURTH—FGIS

One word about the FGIS. We appreciate the existence of FGIS and its certifying procedures for export. However, we want to raise the question whether quality certifying is appropriate without mandatory testing of the intrinsic qualities representing the real value of the beans. Moreover, although FGIS has proved to be willing to contribute to quality amendments, its standard changing procedures often take a long time and are the results of compromises, not taking into account the changes of worldwide quality competition.

WE KNOW THAT THE AMERICAN FARMER IS ABLE TO GROW HIGH QUALITY SOYBEANS WHICH CAN STAND THE INTERNATIONAL COMPETITION

We know that the American farmer is able to grow high quality soybeans which can stand the international competition. We now need these quality beans at the fair market price in order to deliver quality products to our customers. That is the only way to open a bigger market share for U.S. soybeans in Europe since it will put us in a position to compete as a European crusher more efficiently with the products coming into Europe from South America.

Therefore, Mr. Chairman, we appreciate your initiative to increase quality for export by legislative procedures and I thank you for the opportunity given to your export customers to testify.

[The prepared statement of Mr. Vervaeke appears at the conclusion of the hearing.]

Senator DASCHLE. Thank you very much, Mr. Vervaeke, and to all of our witnesses. You have enlightened us and you have presented some very helpful and I must say provocative testimony. Let me ask this question as we begin. Do you believe that quality as a determinant in purchases is more of a factor today than it was 10 or 20 years ago? Yes, Mr. Ageev.

Mr. AGEEV. Well, in our case it is not only much more important now than 20 years ago, it has become more important in even the past 4 or 5 years. As I mentioned in my testimony, we are really under attack by our media. We are beginning to have a bad reputation in our country because we are accused of bringing in grain that does not meet the requirements of our customers. So, definitely it shows that really these requirements are now very high.

Senator DASCHLE. Mr. Vervaeke, would you say that quality is more of a factor in determining where a country would purchase its product than it was before?

Mr. VERVAEKE. Well, I must admit, Mr. Senator, that today there is, of course, more choice on quality. Twenty years ago there was hardly any choice. So, we had to buy the beans, and it was done. Today, there is, of course, a choice. There is very tough competition in Europe, and it is based on both elements, price and quality. So what is amazing is to see that our customers can get quality products from South America at a reasonable price. So we must be able also to compete with that quality. We need beans that have the same standards so that we can produce these products. So it is definitely very important today.

Senator DASCHLE. The grain industry tells me, and I have heard it many times at home and here in Washington that you can buy quality from the United States. That if you want quality you can buy quality. We have No. 1 grade. All you have to do is ask for it. You do not ask for it. You want something less than that. How would you respond to that?

Mr. VERVAEKE. Well, I can give you the example of one of my colleagues who some years ago, 2 years ago, when there were large quantities of damaged beans in the marketplace who thought that it would be the solution, and he bought a couple of cargoes of No. 1 soybeans. Unfortunately, my colleague—

Senator DASCHLE. From the United States.

Mr. VERVAEKE. From the United States, yes. Unfortunately today my colleague, not his company, but my colleague is out of business because the losses he incurred with that transaction did not permit him to continue. So that is always the argument of the companies, the shippers. They say, OK, you can buy quality. You only need to buy No. 1s, or you pay a premium, but we cannot afford to pay that premium. There is quality in the world market, and you do not have to pay that premium. So we are not in a position to pay premium for quality. We need quality. There is quality, and there is also quality over here in the United States.

Senator DASCHLE. In other words, if you buy quality from the United States, you have to pay a premium for it. When you buy the same quality from other countries, you do not have to pay that premium?

Mr. VERVAEKE. Well, I shouldn't say it that way. We pay the market price for other origins, and the quality is included.

Senator DASCHLE. I see.

Mr. VERVAEKE. Whereas here when you pay the market price you do not get quality.

Senator DASCHLE. Mr. Ageev is that your experience?

Mr. AGEEV. Absolutely. I would support that fully.

Senator DASCHLE. Where would you rank the United States with regard to its quality in the last few years on a regular basis? Are we, even though we have some quality problems are we near the top? Would you rank us dead last? Where do we rank with regard to our reputation for quality today? Mr. Ageev?

Mr. AGEEV. Well, I am afraid to say that in our country most of the complaints come against American grain, partly is because we import such large volumes of American grain. It is also because of

those things that I mentioned in my testimony: that the grain is not clean, that there are lots of broken. We have this problem of quarantine seeds. There was also the problem of infestation. So we have maybe 10 times fewer complaints about the grain from other origins. That is not to say that American grain is bad. Your wheat is, well, for other characteristics, it is, of course, superior to European wheat. It is just that if you could solve these problems, then your wheat could compete with any other origin easily. Well, the same goes about corn. Intrinsically it is good.

Senator DASCHLE. So there are 10 times more problems with U.S. grain than there is with most of our competitors?

Mr. AGEEV. I would say so.

Mr. SHESTOPALOV. More problems, complaints.

Mr. AGEEV. Complaints.

Senator DASCHLE. Complaints.

Mr. AGEEV. Yes.

Mr. SHESTOPALOV. Yes.

Senator DASCHLE. FGIS and the export trade say that they only get complaints 1 percent of the time. They are so rare, and then usually when they investigate those complaints, there really does not appear to be a problem. If there are so many complaints, why aren't they reflected in the grain industry more frequently? What is it that keeps people from complaining if there are so many problems?

Mr. AGEEV. You ask me?

Senator DASCHLE. Yes.

Mr. AGEEV. Maybe I did not understand you. But we are complaining very often and loudly, and so you cannot accuse us of keeping our problems to ourselves.

Senator DASCHLE. Well, I will be anxious to ask them. And we will have them come up, and I would like to have you stay here and then we can have a little discussion after they make their presentation, but I am told, and maybe I misunderstand what they told me, but Mrs. Smith alluded to this. That in all of the grain trade, there were only complaints in 1 percent of the instances. That 99 percent of the time there are no complaints. Does anyone want to address why there would be such a low frequency with regard to—Mr. Vervaeke, can you shed any insights?

Mr. VERVAEKE. Well, in fact, we have also formulated on a regular occasion our complaints. But we are perhaps a bit tired to do that again. There is an alternative, and as there is other quality available, we prefer to buy those beans rather than to continue to complain. At this very moment, there are again new complaints about foreign material in the soybeans, and we had a reply. We are told everything is OK as to the methods, the analysis, and especially the sampling methods of USDA; there is no problem. There is a problem. We see it in our cleaning operations, in our cleaning machinery. We get far more grain dust than we got before. We had to reduce capacity, so we notice there is a problem.

Senator DASCHLE. Well, I want to thank you, and what I would like to do if I could is to ask our grain trade witnesses to come over to this side of the table, and we will hear their testimony, and then we will have a discussion following their testimony and my ques-

tions. And I will then bring up the Department of Agriculture as well.

At this time, Gary Riedel, vice president and chairman of International Marketing Committee, American Soybean Association; Steve McCoy, the North American Export Grain Association; and Winston Wilson, the president of the U.S. Wheat Associates.

Mr. WILSON. Senator, I want to make it clear I am not a grain trader.

Senator DASCHLE. Let the record show that Mr. Wilson is not a member of the grain trading industry and certainly represents an important grain, from South Dakota's perspective as well as that of the country. Let us begin, and I think in the order that they are seated here, I will call on Mr. Riedel.

STATEMENT OF GARY RIEDEL, VICE PRESIDENT, AMERICAN SOYBEAN ASSOCIATION, AND CHAIRMAN, INTERNATIONAL MARKETING COMMITTEE, CENTRALIA, MO

Mr. RIEDEL. Thank you, Mr. Chairman. Ladies and gentlemen, I am Gary Riedel. I am a soybean, corn and wheat farmer from Centralia, Missouri. I am also vice president of the American Soybean Association. I am the chairman of the International Marketing Committee, and I also sit on the Grain Quality Committee. I have a copy of my written remarks, and I request that they be placed on file for the record.

Senator DASCHLE. Without objection.

**GRAIN QUALITY IS A VERY IMPORTANT ISSUE TO SOYBEAN FARMERS—
PROBLEM WITH OIL CONTENT AND FOREIGN MATERIAL**

Mr. RIEDEL. My oral comments to you today will be in a more informal manner, and I will try to address the issue as a soybean farmer interested in the promotion of his product.

First of all, grain quality is a very important issue to soybean farmers. U.S. soybean farmers recognize that it is a vital element in the decisionmaking process of our potential customers. The data that I have shown on exhibit 1 [Comparison of U.S., Brazilian, and Argentine Soybean Quality Factors] of my written testimony shows that obviously U.S. soybeans are noncompetitive with Brazilian soybeans for oil content.

U.S. soybeans are also noncompetitive with both Brazil and Argentina from the standpoint of foreign material content. The resulting cumulative lack of value for U.S. beans versus Brazilian beans amounts to 21 cents a bushel. That is a sizable difference, and would make even the most loyal customer think about shopping around.

LEGISLATION

The focus of titles III, V, VI and VII of Senate bill 1977 is to increase emphasis on the end-use and the intrinsic value of the commodity. ASA supports such value-based standards, and we also support education and incentives that encourage varietal selection in the case of soybeans for protein and oil content as well as for yield. We applaud the sponsors of Senate bill 1977 for their efforts in bringing this issue to the front.

Title II of Senate bill 1977 requires that grain from the United States shall meet standards of cleanliness commonly achieved by competing exporters. If this title is implemented, there will be little need to revert to artificial and unfavorable prohibitions on blending because tighter grade standards will automatically take care of the problem. The real crux of the matter is this. As soybean farmers, we have worked for 30-plus years to build markets overseas. We have worked to promote our products overseas, and now we are seeing these markets erode away. It is a real tragedy for us to witness this because of grain quality issues that we feel can be remedied.

GRAIN QUALITY ASSESSMENT FROM FACTFINDING MISSION

In December of 1989, I was fortunate enough to be able to go to Japan, Korea, and Taiwan to discuss grain quality with our customers and also it was a factfinding mission to determine potential for market development. And over and over again whenever we talked about grain quality, the number one refrain was too much foreign material in U.S. grain, in U.S. soybeans. And I witnessed some of the screenings, and a large percentage of the screenings was Yellow corn. It was not dirt. It was not trash. It was Yellow corn.

SOYBEAN INSPECTION DATA ON FARM DELIVERIES

Just for your reference, I have made available some settlement sheets from the first 11 loads of soybeans that I took to market in calendar year 1990. These beans were graded by an independent inspector, a licensed inspector, and the foreign material from those loads varies from .5 percent to .8 percent. You will also note again, as I stated earlier, that on exhibit 1, the average foreign material content for U.S. beans at export unloading facilities was 2.34 percent. I would submit that the only reason my .6 percent foreign material content beans wind up in a shipload with 2.34 percent foreign material is because the grade for No. 2 Yellow soybeans allows 2 percent foreign material.

[The material referred to by Mr. Riedel, Soybean Inspection Data on Farm Deliveries, follows:]

SOYBEAN INSPECTION DATA ON FARM DELIVERIES

Grain received by: Growmark Inc., 400 E Holt, Mexico, MO 65265.

Grain received from: Riedel Farms, Route 1, Box 195, Centralia, MO 65240.

Date	Truck No.	Test wt. (lbs/bu)	Moisture (percent)	Foreign material (percent)	Splits/ defects (percent)
Dec. 8, 1989	031983	56.0	11.8	0.6	5.0
Dec. 8, 1989	031986	56.5	11.6	.6	4.0
Dec. 8, 1989	032000	56.5	11.6	.6	4.0
Dec. 8, 1989	032008	56.0	12.5	.6	4.0
Dec. 12, 1989	032110	56.5	12.2	.7	4.0
Dec. 20, 1989	032361	56.0	12.7	.5	5.0
Dec. 20, 1989	032382	56.0	12.3	.7	6.0
Dec. 22, 1989	032416	55.5	11.9	.8	5.0
Dec. 26, 1989	032430	56.0	10.7	.6	4.0
Dec. 27, 1989	032488	55.5	12.0	.8	7.0

Date	Truck No.	Test wt. (lbs/bu)	Moisture (percent)	Foreign material (percent)	Splits/ defects (percent)
Dec. 27, 1989	032500	56.0	12.3	.6	5.0

NOTE.—Warehouse invoice data transcribed from original documents submitted by Gary Riedel.

Mr. RIEDEL. In 1963 I was a student at the University of Missouri, and I took a course in grain grading, and one of the things we were issued was this little booklet, Official Grain Standards of the United States, and I looked in the front page of this booklet, and it says soybean standards are effective September 1, 1955. I have a current copy of Official United States Grain Standards. The standards, the grade requirements for Nos. 1, 2, 3 and 4 Yellow soybeans, have not changed in the least amount from 1955 to 1990. Thirty-five years of the same standards. Ladies and gentlemen, if I ran my farm with 35-year-old machinery, if I used 35-year-old technology on my farm, the competition would put me out of business in a minute. And I would submit that the competition is going to put us out of business in the export markets if we do not refrain from using 35-year-old standards in the marketing of our grain.

FAILURE TO ADDRESS THE QUALITY ISSUE THAT WOULD MAKE US MORE COMPETITIVE WILL RESULT IN A LOSS OF MARKET SHARE

Failure to address the quality issue that would make us more competitive will result in a loss of market share for U.S. soybean farmers and all grain farmers. Consequently, the farm revenue will have to come out of the taxpayers' pocket instead of out of our potential foreign customers' pocket. It will result in a larger increase in the balance of payments deficit. It will result in fewer jobs and less tax revenue for the Federal Treasury. None of these are consequences that we as patriotic Americans like to see.

SENATE BILL 1977 IS A LONG OVERDUE STEP IN THE RIGHT DIRECTION

Senate bill 1977 is a long overdue step in the right direction. With total commitment toward improved quality, both the U.S. farmer and the U.S. exporter can reap the rewards of being competitive in a world export market. I thank you for allowing me to be here and represent the views of American soybean farmers. I will be happy to entertain any questions you might have.

[The prepared statement and comparison chart of Mr. Riedel appear at the conclusion of the hearing.]

Senator DASCHLE. Mr. Riedel, I have to tell you I have heard a lot of different testimony in many, many years here in the committee and over in the House, and that was really one of the best statements I have heard, and I commend you for it. I commend the Association for what I consider to be a very bold position, and one that has a good deal of foresight. I find it amazing that the producers and the buyers find themselves in large agreement with regard to this issue. But thank you for your testimony. Mr. McCoy.

STATEMENT OF STEVEN A. McCOY, PRESIDENT, NORTH AMERICAN EXPORT GRAIN ASSOCIATION INC., WASHINGTON, DC; ACCOMPANIED BY JIM SWANSON, PEAVY/CONAGRA, NEW ORLEANS, LA

Mr. McCoy. Well, now you will hear from the other side in between, it sounds like. I have got to confess I feel a little bit like Daniel in the lions' den, given all the foregoing, and I am not encouraged that Winston is following up after me. But I think it is important to put things into perspective here.

DRAMATIC TESTIMONY

You have heard a lot of dramatic testimony today. You have heard dissatisfaction on the part of some buyers regarding the quality of grain. Clearly, and I think it is important that we have not really gotten in a discussion so far on distinctions between the marketing issues and the standards issues.

I think that any merchant in any country would support the government of that country enforcing the most stringent possible conditions on the commodity in commerce if those enforcement procedures were going to be effective and advantageous to that merchant in terms of maximizing his economic position, and that is, I think, what we are seeing to a certain extent.

After all our earlier witnesses, our friends from the EC and the Soviet Union, are, in fact, purchasing these commodities, and they are making economic choices and decisions about these purchases, I do not think we would want to characterize their purchases as being completely without rationality. The Soviet Union, for example, has purchased record quantities of corn recently, and notwithstanding any problems they might have with broken corn. The same applies, of course, to the European Community. The market is a system that involves a risk and involves choices for all participants. These choices are made. The process is begun at the farm and continues throughout the entire system.

IT IS IMPORTANT THAT WE NEED TO LOOK AT THE WHOLE WORLDWIDE STRUCTURE OF COMPETITION AS IT RELATES TO QUALITY ISSUES, AS IT RELATES TO PRICE, AS IT RELATES TO RISKS IN THE DECISIONS EVERYONE MAKES, AND JUDGE IT IN THAT CONTEXT

We have a tendency in the United States to consider the U.S. marketing system, the grain production and marketing system as a whole, without regard to the actions and impacts that our buyers and end-users take in relation to the grain that we supply. And I think it is important that we need to look at the whole worldwide structure of competition as it relates to quality issues, as it relates to price, as it relates to risks in the decisions everyone makes, and judge it in that context. And so I would say—and as I started out with one piece of paper as this testimony, as I have heard various testimony I have gathered more and more information here. Obviously I do not have time to deal with each of these issues, but it has been fascinating testimony.

SUBSTANTIAL PROGRESS IN TERMS OF REGULATIONS AND STANDARDS

I am going to use my time briefly here to set the record straight. I am not going to go into depth on this because obviously there are some serious differences of opinion. In my view we have made substantial progress in terms of changes in regulations and standards and everything else in the past 2 years since 1985-86. And it is important to remember what we were dealing with then and what we are dealing with now.

RESPONDING TO CRITICISM

Now you asked Mr. Galliard, or Mr. Galliard recommended or suggested that he would give you a copy of those changes. I have a copy of those changes in my testimony. And looking down the list—I have not counted it—but there is perhaps 40 or 50 changes in standards that we have undertaken in the past several years involving issues like dockage, insect infestation, BCFM separation in corn, soybean oil and testing, which our colleague indicated was an improvement in there. So we have been making tremendous strides in terms of what we have been doing and how we have been responding to some of the criticisms that we have been receiving.

RECORD EXPORT GROWTH

The second thing is that we have to bear in mind is we have also seen record export growth in recent years. I mean we are not in a situation of decline. We are in a situation of expansion in this country, and we can look forward to the consequences of some of the statements that are made today by our buyers, but I would prefer to see this reflected in purchases and not in just testimony about what may or may not happen to the future. We have seen a decline in foreign complaints as documented by FGIS. Now admittedly FGIS does not cover every complaint that is ever made to any company or to someone's next door neighbor or whatever else.

TWO COMPLAINTS FROM THE INTERESTED REPRESENTATIVE AT THIS TABLE

Nevertheless I think it is important to note that as far as the official complaints, those that are made against the standards of the United States, that there were two complaints from the interested representative at this table, one from the U.S.S.R. regarding wheat; no complaints as far as I can say from any European country involving soybeans. So clearly if there are complaints, then the official procedures are not being used, and I would advise those who do complain to use those procedures because that is the process we have to monitor the compliance of our exports with the standards that we have laid down.

Now, you know, as far as I am concerned, and bearing in mind also the high level of producer-industry cooperation that exists right now through the Grain Quality Workshop process, the situation is not quite as dire as some might paint it. And I think we need to be wary of making changes in the system simply in order to achieve some abstract improvement in the future without regard to the practical consequences.

OTA STUDY

Now you recognize the OTA study as being an important contribution to work in this area, and I want to join you in that. I want to also, however, cite OTA's cautionary note on policy change. OTA's study, for example, said that changes in standards and policy must be evaluated against criteria of providing information that is worth the cost of obtaining it. Proposals for change must be tempered by current capabilities of the industry, the cost of adjustments versus potential benefits, the realities of international trading rules, and the history of the grain industry. Quality must be evaluated in the context of technology, competition, foreign demand and processing requirements. In other words, changes applied to the system are difficult, and we have to bear this in mind. We cannot make simple changes in a system that is constantly evolving and has evolved to meet marketing objectives and marketing problems.

WE NEED TO MAINTAIN TOUCH WITH THE MARKET

We need to maintain touch with the market, and I guess, I get a little wary sometimes of a lot of concentration on the whole issue of government incentives. I mean after all it was government incentives in the 1981 farm bill that got us into a tremendous overproduction problem. We have seen government incentives in the current farm bill with regard to production that have resulted in some distortions in the way that we handle our affairs in this country. So I think it is important that government be involved, but I do not think you want to have government leading the market. The market is the ultimate arbiter of quality. In the marketplace the buyer and the seller come together to make the final decisions about it. We may wish it was different. We may wish that we could maximize our opportunities, make better choices, make better decisions in that marketing context, but the bottom line is you cannot guarantee everybody that they will succeed according to what they would have as their optimum or maximum objective. It is up to them to achieve that.

ONE COMMENT I WANT TO SAY IN RESPONDING TO THE MANDATE QUESTION

I have just one comment I want to say in responding to the mandate question. And this came up a little bit earlier, and can we deal with a congressional mandate. I think that certainly you can deal with a congressional mandate. A broad congressional mandate, provided that it is something that is not an imposition on the way in which business is conducted, is probably good and appropriate and certainly represents the viewpoint of the Congress about these things.

It is when you get into specific mandates where there is a problem, and let me just cite one example because it involves the activity of this committee in recent years. You have heard or in your bill, I understand, we are looking toward BCFM separation, or separation of BCFM in corn as an objective to provide more information to buyers. And that is something that is being studied now, and I think we talked about a little bit before. But recall in last

year's FGIS reauthorization bill, the congressional mandate was to combine dockage and FM in wheat. And of course, that issue has been studied.

Now the question is we can deal with mandates, but there is a danger of the Congress laying down conflicting mandates, and I think consequently it is important that the Congress work together with the affected interests to make policy that is responsive to everybody's interests and can be supported by all segments affected. Thank you very much.

Senator DASCHLE. Thank you, Mr. McCoy. Mr. Wilson.

[The prepared statement and attachments of Mr. McCoy appear at the conclusion of the hearing.]

STATEMENT OF WINSTON WILSON, PRESIDENT, U.S. WHEAT ASSOCIATES, INC., WASHINGTON, DC

Mr. WILSON. Thank you, Senator. I would first like to commend you for having this hearing, and particularly for the work that was done to get some significant customers here to hear their point of view. I think this is a very good approach to things and certainly your staff or whoever set this hearing up should be commended for the quality of witnesses that they did arrange to testify.

As has been stated here, we find quality is an important competitive factor.

By the way, I do have a rather lengthy prepared statement that I ask to be submitted for the record.

Senator DASCHLE. Without objection.

WE BELIEVE THAT U.S. WHEAT QUALITY DOES IMPACT MARKET SHARE

Mr. WILSON. I will try to make my remarks brief. We believe that U.S. wheat quality does impact market share. I am here representing U.S. Wheat Associates which is the market development group for U.S. wheat exports. We are funded by producers and the USDA's Foreign Agricultural Service. As a producer-funded organization, one of our responsibilities is to represent the view of importers or customers. We often find ourselves with mixed emotions on quality issues. Producers want to improve quality of export and domestic shipments, but at the same time they are also aware that quality costs money, and they will probably end up paying for it.

But in any case, they still are committed to improving quality. As Steve McCoy mentioned, during the past 4 years, U.S. Wheat, along with other farm and grain trade organizations, some of them represented here, and grain trade groups have been involved with the Grain Quality Workshops. We agree that several positive steps have been taken.

POSITIVE STEPS TAKEN—ACCURATE CERTIFICATION OF DOCKAGE

In the case of wheat, probably one of the most significant actions was the more accurate certification of dockage. For many, many years dockage on certificates in the United States issued by FGIS was understated by one-half percent. Now dockage is stated on a one-tenth of a percent basis. At least we have now gotten to truth in labeling, and that, from our point of view, has been a big improvement.

The customer is happier than he used to be. At least what it says on the certificate is usually going to bear some resemblance to what he finds with his own tests. I think it is also starting to have some impact on awareness by country elevators as well as farmers of the need to pull some of those dockage levels down. We think that this has been positive. We are not totally there yet, and I will mention this in a minute.

WE HAVE MORE ACCURATE CERTIFICATION OF PROTEIN LEVELS

We also have more accurate certification of protein levels than we used to have, and we have seen, frankly, a significant decline in protein complaints over the last couple of years, and certainly this is a nice relief. And I am talking in this case about informal complaints.

You get a very low number of formal complaints that are made to FGIS for a variety of reasons. But I get a lot of informal complaints as do our people in 14 regional offices around the world. We have seen a decline in these complaints in the area of protein levels and that is progress.

THERE HAVE BEEN TIGHTER LIMITS ESTABLISHED ON INSECT INFESTATION

Also, there have been tighter limits established on insect infestation, and we are also seeing some benefits from this. This is one of the more recent decisions, but it is helping.

SOME FORWARD MOVEMENT ON A UNIFORM LOADING, OR CU-SUM PLAN

Fourth, there has been some forward movement on a uniform loading, or Cu-Sum plan. However, as was stated earlier, the new proposal has yet to be published in the Federal Register, and at this point we are not certain that adequate progress has been made, and I want to mention this more in just a moment.

UNITED INDUSTRY APPROACH TO PROBLEM SOLVING IS AN EFFECTIVE AND REASONABLE APPROACH TO IMPROVING U.S. WHEAT QUALITY

We believe that the united industry approach to problem solving is an effective and reasonable approach to improving U.S. wheat quality. Last month our board of directors endorsed a continuation of this approach, but also gave the staff the mandate to get the dockage in U.S. wheat export shipments down to an average of 0.4 of 1 percent over the next few years. Currently the average dockage in export shipments is around .8 percent. So we would like to see that come down, and our board has instructed us to work toward that goal.

While U.S. Wheat is prohibited from taking positions on specific legislation because of restrictions on some of our State Wheat Commission members, I have come today to comment on some specific issues which we feel need to be addressed by the U.S. wheat industry.

SPECIFIC ISSUES WHICH WE FEEL NEED TO BE ADDRESSED BY THE U.S.
WHEAT INDUSTRY

As I think has been pointed out today, in many cases wheat and other grains from the United States have less than an optimal reputation from a quality standpoint. I think we feel that the situation is not as bad as some people would lead us to believe, but is not as good as it should be. There is decidedly room for improvement despite the fact we have had some improvement over the past few years. Certainly the OTA study points this out, and we are convinced that our quality reputation costs U.S. producers in lower prices and in lost sales in many instances. In terms of specific areas, dockage is our number one concern. We feel very strongly that dockage levels need to be reduced. As indicated earlier, our board would like to see them reduced to an average of .4 percent over the next few years.

Obviously, dockage adds to freight and other costs. It is the major source of insect infestation and quarantine weed seed problems, the items Mr. Shestopalov was discussing earlier, and it is starting to be a problem from the standpoint of pollution and airborne dust concerns at ports receiving U.S. grain. The other problem is that dockage tends to separate during loading and shipment, since, in the case of wheat, many of our shipments go to multiple destinations. Several flour mills in an individual country receive part of any given cargo, and they see a lot of variation. One mill gets great wheat, and the next one gets an undue amount of dockage, and complains bitterly. You very seldom get laudatory letters from the guy who got the bad stuff. But the thing is, better uniformity would prevent this problem.

We also feel we need to do a better job of separating damaged grain from sound grain. This is particularly a problem in the case of sprout damage, and we think we need to look very carefully at this issue.

Another major issue is the shiplot loading plan, or Cu-Sum plan. As you are aware, FGIS does use a statistical acceptance plan to determine whether or not the shipment meets contract and grade specifications. FGIS acknowledged some years ago that the current plan is statistically biased against the buyer. FGIS has been working on a revised improved plan for several years. It is still not in the Federal Register. We believe that an unbiased loading plan which is fair to both buyer and seller is probably the fundamental issue to the integrity of the U.S. grain grading system because contract specifications and grade specifications do not mean a thing if the loading plan does not mean that this is accurately reflected in what is actually loaded on the vessel. We think that needs attention.

We are also concerned at the moment that we suffer from a serious lack of information in regard to the possible presence of chemical residues and heavy metals in U.S. export wheat shipments. The problem is compounded by the fact that the current GATT negotiations are seeking to harmonize international standards in this regard. At the current time, U.S. negotiators have no idea what levels exist in shipments of wheat from the United States. This is research that should have been done a long time ago, but it cer-

tainly is critical that it be done now. FGIS is attempting to work on this.

I think one of the most important things that Congress could do in the midst of deliberations on the farm bill this year is to give FGIS a decent research budget to work on a lot of these issues. Their total research budget is less than \$1 million. Yet we have all these problems out there, and we need some money appropriated for research for FGIS to look at these issues. That is a big problem, and I would encourage the Senate and the House both to give this some thought because there is a serious technology gap right now in coming up with an adequate testing program and new technology. FGIS is the agency that has to do this.

In conclusion, I would say that we feel much has been accomplished to improve grain quality. We have cited some of the changes that still ought to be made. It is very easy to say, well, the buyer can specify any quality of grain that he wants to buy. However, very often we find that they either get no offers, or the prices are very high if their standards are quite high. We need to remedy this situation. Buyers ought to be able to buy and be confident they will receive the quality they specify. However, we also need to be aware that exporters cannot sell a product which is not available in our system.

We must find a solution that provides economic incentives all the way from the farm gate to the export shipment. Now we have trashed and bad-mouthed the exporters a little bit. Sometimes it has been a little difficult to get them moving in what we thought was the right direction, but let us not blame all of our problems on them. Having been a wheat farmer for several years and having run a country grain elevator, I am quite confident that there is not much that goes out the export spout that some farmer did not haul into the country elevator over the scales. We have to start there, and it has to go all the way through the system. I think our producers are prepared to make those changes, fully aware that they are going to probably bear the brunt of the cost. But they want to make sure that the changes which do occur result in more satisfied customers, because we think our export and domestic customers are important to us. Thank you.

[The prepared statement of Mr. Wilson appears at the conclusion of the hearing.]

Senator DASCHLE. Thank you, Mr. Wilson.

Mr. Galliat, I am going to invite you to come up and participate in the discussion at this point. Mr. McCoy, I want to clarify one thing with regard to complaints. As I understand it, an official complaint is only lodged when a purchaser would make the charge that an FGIS inspector did a poor job. It does not relate to the quality of the grain; is that not correct?

Mr. McCoy. Well, I think an official complaint can be lodged for any reason. The complaint procedure, so-called, is really an evaluation of the performance of our current standards. All contracts that are signed between buyers and sellers in this country—there may be some rare exceptions, but by and large, 99.9 percent, are contracts which specify compliance with U.S. grades and standards. And so consequently, in terms of compliance with contract terms, the contracts require, and indeed, the law requires that FGIS certi-

fy the quality of the grain so it meets certain specified standards. With a quality complaint procedure, the person places his complaint. The FGIS goes back to the sample and inspects the sample, and if they find that the sample that they had inspected initially retests again within the contract terms, then the complaint is not considered to be a legitimate complaint.

Now this does not mean that it is not recorded in the FGIS annual report. The FGIS every year reports the complaints, and it is an important piece of information because it indicates where complaints are coming from. For example, we have heard a lot of complaints about dockage. In terms of the official record, there have not been tremendous complaints about dockage recently. Unofficial complaints are handled through the market system. If you, as a buyer, have a complaint because you do not feel what you received meets the contract specifications, then you are free to go to the seller and say what the problem is, and between buyer and seller an arrangement is made. Some sort of arrangement is made if there is a problem. In other words, the market deals with this. The market is its own complaints procedure.

Senator DASCHLE. Well, I am not sure you answered my question. I mean basically—correct me—Mr. Galliard, maybe you can shed some light on this. Is the official complaint procedure designed to deal specifically with complaints about grain quality or complaints about meeting standards and the official inspection process?

Mr. GALLIART. It covers the so-called waterfront. Anything they feel they need to complain about, we will accept. Also, we have a formal system worked out through the Foreign Agricultural Service. The complainant expresses his concern to the ag attaché who, in turn—and there are some forms involved—communicates the information to us. We accept any and all complaints whether it is through the formal procedure, that I just mentioned, or an informal complaint. I might use an example that was mentioned earlier by Mr. Wilson regarding a problem with protein. There were a number of complaints that came to us with regard to our protein results. We spent a great deal of time and effort working on it and we were successful. It required collaborative studies between ourselves and the customer and a change of our quality control system.

What I am saying to you is that we do pay attention, and to the best of our ability we investigate complaints. We are limited in what we can do. We cannot go back to the customer and offer him some kind of remuneration. We review our grading and, at times, travel abroad and look at the grain as it is being unloaded.

Senator DASCHLE. Would you have any objection to Mr. Vervaeke's recommendation that we guarantee the quality that we say we are going to sell?

Mr. GALLIART. I personally would have an objection to guaranteeing it. One of the basic reasons for having an objection is the condition of the grain when it arrives at destination. Grain can go out of condition in transit.

Senator DASCHLE. What about that, Mr. Vervaeke? Mr. Galliard says, sure, it is nice to guarantee it on one end of the coast, but by the time it gets over there, we have no control over what kind of quality it would be.

Mr. VERVAEKE. Well, I think it should be a first step. There should be a guarantee at shipment. That is the first step.

Senator DASCHLE. At shipment?

Mr. VERVAEKE. Yes.

Senator DASCHLE. What about having a guarantee at shipment, Mr. Galliart?

Mr. GALLIART. Our certificate of grade is our guarantee. We certify the quality at the time of loading.

Senator DASCHLE. So what is wrong with that? What is wrong with just a certification that this is the quality?

Mr. VERVAEKE. Well, the point is that we have quite some difference lately with, for instance, the foreign material content. We notice that the foreign material that has been determined here at shipment does not correspond at all with the foreign material on arrival.

Senator DASCHLE. In other words, the certification is meaningless because even though it is certified, you get a product other than what was certified; is that it?

Mr. VERVAEKE. Yes. But this is clearly a problem in the sampling procedures, as I must admit we have the same problems. When we made the analysis on arrival, we found the same results in the beginning because we used the same sampling methods. We only noticed that in our cleaning machinery we got far more foreign material than we found in the analysis, and then we only now discussing with FGIS, and we are now using other sampling methods because we have seen that large quantities of fine dust are not taken into the samples. So we are both analyzing samples that do not contain the real quality of the merchandise.

Senator DASCHLE. So the certification is not representative of the quality of the product that you are getting?

Mr. VERVAEKE. Yes. Yes.

Senator DASCHLE. So would not a guarantee provide a mechanism to ensure that what is certified to be the product is actually going to be the product?

Mr. GALLIART. In my view, the state of the art is such that we can guarantee, if you want to use the word "guarantee," our grading results at the time of loading.

Senator DASCHLE. How good is the guarantee, though, if there is no recourse once the product does not meet the standards to which it was guaranteed?

Mr. GALLIART. I think our record shows that the majority of the shipments that arrive at the destination are the quality we indicate on our certificates. Now I recognize that as indicated by the complaints, we do have problems with some of the lots. There is no question about it. We also have problems with sampling, as the gentleman indicated. There is, as I mentioned earlier, a phenomenon called segregation. When one loads grain, heavier material will move to the outside of the stream; the lighter material to the inside. That creates some problems.

Senator DASCHLE. Mr. Galliart is saying that there is a natural segregation that occurs in shipment and that creates some of the problem. Do you have a segregation problem with grain shipped from other countries?

Mr. VERVAEKE. No. In fact, that is another problem. The one is, of course, that we get higher FM content, even higher than is what is certified so we have to discuss the sampling method. But away from that one, there is the comparison with the other origins, and there we find, of course, far less foreign material content. So we always continue to compare with what we get from the other origins, and there we get hardly 1 percent. They guarantee maximum 1 percent, but we find they are .50, .60. Here in the United States the guarantee is maximum 2 percent, and you must be sure you will get the 2 percent.

Senator DASCHLE. How do you respond to that, Mr. McCoy?

Mr. MCCOY. Well, I am glad you asked me. First of all, we have another guarantee involved in this whole transaction. It is the contract. I think everybody loses sight of the fact that this is not a relationship in a vacuum. This is a buyer-seller contractual relationship in which the buyer is specifying certain terms and conditions, and the exporter is providing grain that lives up to those standards.

Senator DASCHLE. He is saying they do not live up to them. He is saying that they are on good faith buying a product that does not live up to the product that is delivered, and he has cited some problems—Mr. Galliard has given some excuses—that he says do not occur with the shipment of grain from other locations.

Mr. MCCOY. Well, I would not suspect that. Perhaps—first of all, let us separate the issue of segregation from the issue of the sampling. Basically, what I understand is going on is that in this instance, the mill is using a different sampler than FGIS. And so you would expect that the results would be different. Indeed, as I understand, when you use the same sampler as FGIS the results were the same so it is a question of—

Senator DASCHLE. Is that true, Mr. Vervaeke? If you use the same?

Mr. VERVAEKE. It is true. When we use the same method of sampling, we find the same result. But once again what I want to say we find now sampling is one thing, but we find in our machinery lately then that we get far higher concentrations of foreign material.

Senator DASCHLE. So in other words, the sampling really does not bear any resemblance to the final product, so what good is sampling; is that what you are saying?

Mr. VERVAEKE. That is what I am saying, yes.

Mr. MCCOY. But that is a technological issue. I mean it—

Senator DASCHLE. No, it goes way beyond technology here. I mean why does that happen, and why is it not happening in other countries?

Mr. MCCOY. I think that because what we are, in effect, in this instance what we are talking about may be particular characteristics that may not be quite such a problem in other countries. I do not know what the sampling circumstance is. I think that, though, as a general term, we have to be aware of the fact that the standards that we have in this country, and the technology that we have in this country, and the system that we have in this country for grading and inspecting and delivering grain is far superior to anything in the rest in the world. Now everybody—there will be a lot

of disagreement about that—but no one competes on the basis we do. No one provides the volume we do to the number of customers we do on time under contract specifications day in, day out. And that is one of the reasons why we are competitive.

That is one of the reasons that people come to our market is because the guarantee, if you like, is that they can always get U.S. grain of a quality that is perhaps not what they would want at that particular time, but they know they can always get it in the U.S. market, and no one else can provide that.

Senator DASCHLE. Can I ask our buyers if that is the case? Do you see it? That we have the highest quality standards in the world; is not that what you said?

Mr. McCoy. Well, I think we have the best technology for dealing with quality issues.

Senator DASCHLE. Well, wait a minute.

Mr. McCoy. If I said—

Senator DASCHLE. Are you saying we have the best technology. That is a substantial reduction from the statement you just made.

Mr. McCoy. All right. Well—

Senator DASCHLE. Would you say, then, we are utilizing the best technology in arriving at the finest quality product?

Mr. McCoy. Well, I think what I meant to say, and I have to maybe not talk so fast, what I meant to say is that the system that we have in place and the expertise that we can bring to bear on this issue from the university through the inspection agencies through the independent capabilities of laboratories and companies, et cetera, is far more sophisticated than those kinds of capabilities in other countries as a general rule, other competing exporting countries, which means that, I think at least personally, I am less, I am loath to doubt the reliability of data generated in the United States when compared with data generated elsewhere. We get into this problem all the time.

Senator DASCHLE. But if your purchasers tell you, if your buyers are saying, look, we are getting 10 times the complaints with your product than we are with any of your competitors, I do not care how much technology you have, I do not care how many rocket scientists we have in this country, the system is not working. We are not delivering the product that they say they want. Now we may be producing volume, and because there is an adequate volume, we are not able to get quality, they will buy volume, whatever they can get, if they need the grain. Even though they would like higher quality, they will probably buy it. But if they have a choice, what they are telling us is they are going to choose quality grain.

Mr. McCoy. But could I—

Senator DASCHLE. Did you want to respond to something, Mr. Vervaeke?

Mr. VERVAEKE. Yes. In fact, I would like to say that that is true, that in the United States there is the best technology available to reduce the quality. And it is the only country, I think, where the quality has been manipulated after production. We all know that we are buying a natural product, an agricultural product. So one crop-year is not the other crop-year. So there are natural differences, and it is also true for your competition. But I think the

United States is the only country where the quality is adapted to the standards and to the limits after the production.

Senator DASCHLE. Do you see that as a favorable attribute of our system or an unfavorable attribute?

Mr. VERVAEKE. That is really unfavorable.

Senator DASCHLE. That is what I thought. Mr. Ageev, did you have a comment?

Mr. AGEEV. Well, yes, I would agree with Mr. McCoy that a big advantage of the United States, as far as grain trade is concerned, is that we can buy any volume we want, and ensure shipment within the period of time we require. And that is why, one of the reasons why, we buy so much U.S. grain even though we complain about the quality. Another reason that our overall purchases of grain are so big is that, at the present stage, we have very little room for choosing. So we buy practically all the grain that is coming our way. But as I mentioned, we hope that measures we are taking in our agriculture will help us to eventually, maybe not next year, not very soon, but eventually to reduce our reliance on imports of grain.

We hope that our imports will start to decline very soon, and then we will have much greater choice, and in that case, of course, we will try to buy the best quality available.

Senator DASCHLE. Now Mr. Wilson says that we have made substantial progress in truth in labeling, and we have a lot tighter limits on inspection, on insect infestation, than we have had before. But you just told me in your testimony that you haven't seen any improvement at all in insect infestation.

Mr. AGEEV. No, no, no. You misunderstood me.

Senator DASCHLE. Oh, OK. Good.

Mr. AGEEV. Well, we deal with the problem nowadays by fumigating the grain in transit after it is loaded into the vessels in the ports of the United States. So we do not know what it was before it was loaded, whether there were weevils or not. But they are killed during transportation. So after we introduced this method, then there is practically no problem with infestation now. I said that last year only .3 percent arrived infested against 10 percent on the average, say, 10 years ago, even 5 years ago.

Senator DASCHLE. So we are making progress with infestation?

Mr. AGEEV. It is not so much—yes. But there are health hazards involved in that, and we are afraid that in our country, there may come a time when they will demand that we abandon this kind of treatment of grain.

Senator DASCHLE. So you have health hazards that come about as a result of the fumigation?

Mr. AGEEV. Entirely. Well, anyway we think so. And basically I think that is the case. What I want to say also, from other origins, we do not fumigate the grain during transportation, except from Argentina. So from Australia, although Australia is a hot country, so weevils, weevil infestation, I presume you know, there should be—anyway Australian grain should be as infested as American, but they are taking some measures in the interior so that we do not have to fumigate in the vessels.

Senator DASCHLE. Who pays for fumigation?

Mr. AGEEV. Well, this is included in the contract price.

Senator DASCHLE. So you pay for fumigation?

Mr. AGEEV. So eventually, yes, I suppose we pay for it. But it is all organized by the shippers.

Senator DASCHLE. Mr. Wilson.

Mr. WILSON. A couple of comments. The change that occurred in insect limits from the export standpoint is that at a certain level of infestation, fumigation is mandatory by the shipper. In other words, if x number of live insects are found by FGIS, then the lot is declared infested, and therefore, it must be fumigated. That number was lowered significantly which means that more shipments now are being fumigated than in the past with the same level of insect infestation. In the past, the Soviets had, frankly, not allowed effective fumigants to be used, they did make this change, and that has helped the problem.

Certainly the exporters could address this better than I, if a buyer specifies every shipment to be fumigated, that is usually at his expense; but if FGIS determines that a lot is infested, then it is at the seller's expense as a general rule.

Senator DASCHLE. Yes, Mr. Riedel.

Mr. RIEDEL. I just wanted to make a couple of comments in regards to what Mr. McCoy said. Number one, he said that the exports had increased, and that has not been the case with soybeans, as many of you well know. And I will cite an example from my written testimony. In 1984 we had 92 percent of the market share in the Japanese market. That is our single largest country customer, and in 1988 we are down to 78 percent, and the South American share has grown from almost 0 to 25 percent.

Senator DASCHLE. To what do you attribute that development?

Mr. RIEDEL. We are talking 25 million tons. And after being there I attribute a great deal of it to the quality issue.

Senator DASCHLE. Quality.

Mr. RIEDEL. Quality and competitive pricing.

Senator DASCHLE. Mr. McCoy made two statements—

Mr. RIEDEL. The second—

Senator DASCHLE. Excuse me. Oh, go ahead.

Mr. RIEDEL. One other point he made, and that is he had qualms about seeing the government lead the way with quality incentives, and I say that I, too, would prefer not to see that. I would much rather see his industry lead the way with quality incentives, but when industry does not provide them, when the merchandisers do not provide quality incentives, but rather provide disincentives by their lack of action, then we are forced to rely on government to force their hand.

Senator DASCHLE. I was just going to say Mr. McCoy made two statements that I wholeheartedly agree with. One is that you have to maintain touch with the market, and number two, the market is the ultimate arbiter of quality. And the real question is does the market, do components of the market take it upon themselves to see that we are still competitive, or is it going to take something else?

I have to tell you this is fascinating, and I am not going to let go of it. I am going to be in this thing, and those who know me know that when we sink our teeth into something we just hang on and it just does not go away. And for anybody who has any doubt about

that, I do not know how long I am going to be around here, but for as long as I am around here, this is going to be a major issue for me.

I want to be able to go to Japan and the EC and the Soviet Union some day, and I want them to tell me thank you for having the best quality product we can buy, and that is not something I could do today.

The final question I would like to ask is this. And maybe Mr. McCoy would have to answer this. But anybody else give me the American answer to the unanimous report I got from our three foreign purchasers, and that is we can buy premium grain at a competitive price from other countries. We cannot buy it from you. Now why is that?

Mr. McCoy. Well, I do not know if that is exactly what I heard.

Senator DASCHLE. Well, let me just clarify that.

Mr. McCoy. OK.

Senator DASCHLE. Is that what you said or not? Did you say you can buy a premium product at a competitive price from other countries?

Mr. AGEEV. Well, we can buy at competitive price. You know I do not want to say that American product is bad. It is not clean.

Senator DASCHLE. Right.

Mr. AGEEV. So I say intrinsically it is good. But we can buy clean product from other countries at competitive price.

Senator DASCHLE. At a competitive price. OK. Mr. Vervaeke.

Mr. VERVAEKE. Yes, that is probably what I should say. We can buy better quality at competitive price, and there is one thing I should add. For instance, Brazilian beans, you cannot get them at any quantity. Quantities are limited, but not as limited in Europe is the product, the meal. So during wintertime we must compete on the basis of U.S. soybeans with soybean meal from Brazil. So the competition continues. Even if during wintertime, there are more sellers of their meal rather than of their beans. But we have the same competition for the whole year.

Senator DASCHLE. That seems to me to go to the real heart of the problem. I mean what they are telling us is what I hear the lament about so many of our other products in this country, steel, autos, computers, you name it. We can buy a premium quality at a lower price, whether it is a Honda or whether it is a ton of steel or something else. I am hearing that same thing now from our purchasers of grain. And I tell you what. It scares the devil out of me to think that in the next 10 years we are going to suffer the same demise in agriculture that we have already suffered elsewhere. And you know somebody once said there is no education in the second kick of a mule. It does not seem to me we need to be reeducated about this. So tell me, Mr. McCoy—

Mr. McCoy. Mr. Chairman, first of all, I want you to understand how seriously everybody in the agricultural community is taking this issue.

Senator DASCHLE. Well, I tell you I am not convinced today.

Mr. McCoy. Well, I invite you please to come and witness the very fruitful exchanges we have in the Grain Quality Workshop process.

Senator DASCHLE. Well, talk is one thing; action is another.

Mr. McCoy. No, but these actions, I mean the improvements that have been taking place in recent years have by and large emerged from that workshop process rather than through the legislative route.

Senator DASCHLE. Well, but you have three customers who say they cannot see a difference.

Mr. McCoy. Well, I think there are limits to how quickly people can respond in a system that is designed basically to——

Senator DASCHLE. There you go. It is a system designed, and we can change that design.

Mr. McCoy. I think that you certainly can. There is no question about that. But you need to bear in mind that, if you make that decision, it is going to have some ramifications. The ramification is going to be particularly serious for the farmers——

Senator DASCHLE. I hope so.

Mr. McCoy [continuing]. Who are going to bear the cost of the change.

Senator DASCHLE. Well, they are going to bear the cost, but they are also going to bear the benefit.

Mr. McCoy. That is something that only time can tell, I think.

Senator DASCHLE. That is right. Well, listen I cannot thank you enough, and Mr. McCoy has been a real—you ought to get a pay raise for what you endured today, but maybe with quality grain they will look forward to giving you a pay raise in the future. But in any case, we want to thank those who traveled so far to share their insight with us. I do not mean to—I may have tried to induce more confrontation than Mr. McCoy felt comfortable with. And I do not mean to have purchasers confront their exporters, but I think there is a real dialog here that can develop a better understanding, and I must say I have learned a good deal this morning. I appreciate our Department of Agriculture witnesses as well as our commodity witnesses. This is a learning experience, and from it all I hope we can develop a real determination and ultimately a successful conclusion to what I hope will be a concerted effort to make us the most competitive nation with the highest quality product that man can produce. Thank you. The hearing is adjourned.

[Whereupon, at 12:05 p.m., the subcommittee recessed, to reconvene at 9:30 a.m., Thursday, February 22, 1990, in room SR-332, Russell Senate Office Building.]

[Material submitted for inclusion in the record follows:]



APPENDIX

PREPARED STATEMENT OF JO ANN R. SMITH, ASSISTANT SECRETARY, MARKETING AND INSPECTION SERVICES, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, DC

Mr. Chairman and members of the subcommittee:

We appreciate the opportunity to comment on the grain quality initiatives outlined in S. 1977, the Grain Quality Incentives Act of 1989.

We applaud the interest of this subcommittee in the grain quality issue. The competitive environment of the international grain market and the public outcry over food safety have elevated the importance of grain quality. The quality of U.S. grain will play an increasingly important role in determining the U.S. share of the international grain market. The challenge we face is how best the United States can address this most important issue. We must decide what role the U.S. Government should have to assist in promoting grain quality improvements. How can we improve grain quality without disrupting the processes inherent in current marketing practices?

The Department believes, for the most part, that adequate laws exist to achieve the overall congressional objective of improving grain quality. The U.S. grain industry can deliver almost any type (kind, variety, and quality) of grain desired by buyers. This capability has been achieved by the hard work of producers and all members of the grain industry with little government intervention. We believe these scientists, producers, grain handlers, and merchandisers will further this capability by recognizing and responding to the varied needs of their customers.

Based on research and new technology, the Department believes progress continues to be made on improving grain quality. Numerous research programs being conducted by the Agricultural Research Service are aimed at improving grain production, handling, storage, and processing technologies. From a marketing standpoint, the Department continues to evaluate its role. In recent months, the Agricultural Stabilization and Conservation Service (ASCS) for Commodity Credit Corporation (CCC) requested public comments on grade and other quality adjustments to be used in making price support available to producers on their 1990 crops. A summary of the public comments received by ASCS is submitted as an attachment to this statement (attachment 1). A representative from ASCS is here with me today to address your specific questions.

The current grain standards serve as a common language for distinguishing the physical and biological conditions of grain. Legislative action and industry consensus over the years have helped shape interaction of the grain standards with the competitive U.S. grain marketing system. Since 1916, the grain standards have enabled buyer and seller to compare grain quality using equivalent forms of measurement. The equipment and tests used for comparing grain quality have changed but the standards continue to reflect the needs of as many factions of the industry as possible and rely on testing methodologies that are accurate, timely, simple, and cost effective.

Changes have been made to the grain standards in response to changing marketing conditions. Today we are confronted with many suggestions from all segments of the grain industry on how changes to the grain standards and the national inspection system could improve U.S. grain quality. Some believe only minor changes to the grain standards are necessary, while others believe the standards and inspection system have not kept pace with new technology and marketing practices, thus demanding a much broader evaluation of the grain standards and possibly greater change.

We believe the grain standards continue to serve the grain market well, especially as technological advances allow the national inspection system to expand testing ca-

pabilities to cover quality attributes more directly related to end-use processing. During the 1980's, significant accomplishments were made to improve the grain inspection system. As part of my statement, I am submitting a list of major grain quality accomplishments made since 1985 along with our plans for further improvements (attachment 2).

In considering the subject of grain quality, it is important that we define it. The Office of Technology Assessment report entitled "Enhancing the Quality of U.S. Grain for International Trade" and the USDA's "Report on the Study of Uniform End-Use Value Tests" defined grain quality as three basic categories: (1) wholesomeness, (2) physical condition, and (3) intrinsic attribute. We believe this is an acceptable view of grain quality. A grain kernel is a living organism, responsive to the changing environment during production, harvesting, storage, and processing. This contributes to the complexity of improving grain quality. If the level of protein is increased, what compromises must be made in yield? If the separation of chaff and weed seeds during harvest is improved, what compromises must be made on yield and physical damage to the kernels? To improve resistance to drought, insect infestation, and disease, what compromises must be made on end-use performance?

These are the many issues that everyone from breeder to producer to grain handler to processor must continually assess.

WHOLESOMENESS

Grain quality in terms of wholesomeness is receiving greater attention due to the public concern over food safety. Advances in technology allow us to more closely analyze our food sources for contaminants. USDA agencies are using this technology to survey food products entering marketing channels and to provide the food industry with enhanced quality testing services. In 1989, the Federal Grain Inspection Service (FGIS) approved several new aflatoxin testing methods that provide quick, reliable results.

These testing methods better suit the rapid information needs of the grain industry as grain moves from the farm to market. Implementing these advances in testing technology illustrate how USDA is responding to the informational needs regarding grain wholesomeness.

The legislation before you addresses grain wholesomeness in section 301 by requiring the establishment of purity standards for export grain and in section 603 by requiring the immediate development of testing methods for mycotoxins and pesticide residues. Once a testing method is available for a mycotoxin or pesticide residue that has an official Federal tolerance, the legislation requires that FGIS incorporate such tolerance into the grading system. The legislation also directs the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) in section 105 to seek assistance from and cooperate with FGIS regarding the enforcement of laws relating to grain purity and safety.

The Department believes its efforts regarding food safety adequately address the congressional concern without further legislative action. Efforts are underway to develop rapid testing capabilities for pesticide residues and to provide a nationwide testing service for mycotoxins as rapid, reliable testing methods are evaluated and approved. During FY 1990, FGIS plans to evaluate commercially available testing methods. Information obtained through the inspection process regarding pesticide residues and mycotoxins is reported to FDA and EPA in accordance with procedures agreed to by each agency. FGIS has a long-standing memorandum of understanding with FDA specifically designed to communicate to local FDA officials quality information that exceeds FDA action limits.

PHYSICAL CONDITION

The physical condition of grain has received the greatest level of attention over the years. This is due, in part, to the fact that the standards have primarily concentrated on the physical characteristics of grain as the criteria used to distinguish different quality levels. The physical condition of grain can be divided into two basic subcategories: (a) cleanliness and (b) damaged kernels or soundness.

Cleanliness refers to the removal of chaff, weed seeds, and other foreign matter from grain and oilseeds. High degrees of cleanliness are technologically achievable. There are numerous articles citing the benefits of cleaner grain—reduced transportation costs, decreased energy consumption for drying and aeration, and improved insect infestation control, to mention a few. If this is the case, then why hasn't the market incorporated grain cleaning as a normal marketplace practice? Some would say it has. To a large extent, the domestic U.S. market cleans grain at the point of processing. Depending on market prices and geographical location, some cleaning

occurs earlier in the marketing process. In the Spring wheat market, domestic millers and certain foreign buyers have established market incentives to clean wheat.

S. 1977 addresses grain cleanliness in section 201 by requiring the establishing of export cleanliness standards for grades 1, 2, and 3 that equal the levels commonly achieved by competing exporters. At this time, the impact of this change is unknown. Even the extensive OTA study did not fully address this issue. It is clear, however, that achieving cleanliness standards equal to the Canadians, for example, will require significant capital investment on the part of U.S. industry. We do not have quantitative results based on a common means of measurement that compare U.S. grain cleanliness with competing exporting countries such as Canada. Phasing the requirement in over a 5-year period would eventually require substantial investment on the part of grain handlers to clean grain. I have submitted for the record a copy of the maximum tariffs paid terminal elevators in Canada to clean wheat (attachment 3). The current tariff for cleaning wheat at terminal elevators is \$2.21 (U.S.) per ton or approximately 6 cents (U.S.) per bushel.

Although the Department supports the concept of exporting cleaner grain, we believe it is premature to establish export cleanliness standards without further review of the benefits and costs. In addition, we need to consider the benefits that may result from recent and future changes to the inspection system. In 1987, FGIS began reporting wheat dockage to the nearest tenth of a percent rather than to the half percent with any fraction thereof disregarded. This action was well received by domestic and foreign users of U.S. wheat. They now have the necessary information to better assess the value of wheat and the feasibility of cleaning wheat. Those segments of the domestic and export markets that desire lower levels of dockage have instituted pricing schedules and contract requirements to achieve their objective. For example, Taiwan has adopted tighter dockage specifications. In 1985, Taiwan imported Spring wheat from the United States which averaged 1.02 percent dockage. After Taiwan adopted tighter requirements, the 1988 average was 0.62 percent dockage, not far from the target level of 0.4 percent used by Canada.

Future changes that may influence grain cleanliness involve the foreign material and broken kernel requirements for corn and sorghum. FGIS is working with the industry-sponsored Grain Quality Workshop in an effort to determine the benefits of establishing separate grade limits for broken kernels for which some end-use value exists and for foreign material which has a much lower value. A study currently underway at the University of Illinois and Iowa State University regarding broken corn and foreign material will aid in determining an appropriate course of action.

The Department also plans to work with the grain industry to encourage the development of a "Good Handling Practices" standard. The standard would set industry cleanliness standards for barges, railcars, other forms of transportation, storage facilities, shipping bins, and other potential sources of contamination. Furthermore, the Department will recommend that the standard include a maximum diameter screen on all receiving pits. These actions and others will serve to minimize inadvertent contamination of grain and have much less impact on the grain industry than requiring the installation of cleaning equipment. Implementation of this standard would be an industry initiative without Federal involvement.

The second category dealing with the physical quality of grain is the soundness of the grain. This refers to kernels damaged by heat, insects, molds, weather, and sprouting and broken kernels. The national inspection system addresses these conditions through the establishment of grading factors, such as damaged kernels total and shrunken and broken kernels in wheat. The grading limits for these factors have been established through the rulemaking process.

The Commitment to Quality report released by the industry-sponsored Grain Quality Workshop in 1985, the Grain Quality Improvement Act of 1986, and the recent OTA report on grain quality, all highlighted the need for the grain standards to better reflect end-use quality needs. Modifying the grain standards regarding the soundness of kernels offers an opportunity to address this need. For example, in 1986, FGIS revised the definition of mold damage in soybeans to meet the National Soybean Processors Association and Federation of Oils, Seeds, and Fats Association trading rule of a maximum of 0.75 percent free fatty acid. This change results in U.S. No. 2 Soybeans containing less than 0.75 percent free fatty acid.

Another change currently under consideration involves sprout damage in wheat. During the December 1, 1989, meeting of the Grain Quality Workshop, the membership discussed the benefits of establishing a separate tolerance for sprout damaged wheat. It is widely recognized that very low levels of visual sprout damage have an effect on the end-use performance of wheat. The current standards allow up to 4 percent total damaged kernels for U.S. No. 2 wheat. If the total damage consists primarily of sprout damage, this may result in an unacceptable wheat for many end

uses. Tightening the limits on visual sprout damage and continuing to develop a testing method to better measure the effects of or actual amount of alpha amylase will improve the grain standards. As a result, U.S. No. 2 wheat, the primary quality exported, would better meet end-use performance needs.

Title III of S. 1977 seeks to improve the physical soundness of export grain by directing the Administrator of FGIS to take the necessary steps to ensure that foreign buyers purchasing U.S. grades 1, 2, and 3 receive grain of suitable soundness and purity considering their end-use performance needs and the condition of grain supplied by competing exporters. The Administrator is to accomplish this task by revising the grain standards and, if necessary, prohibiting the blending of low quality with high quality grain.

Although the Department agrees with the subcommittee that the official grain standards should reflect levels of soundness and purity consistent with the needs of the major end users of each grain, we believe almost all of the current standards achieve the soundness and purity objectives, when considering the available testing technology and market conditions. The change to soybean damage and the current work on sprout damage in wheat represent positive steps toward achieving these objectives. Advances in grain testing technology will enable FGIS to further improve the inspection process and provide users of U.S. grain with better information to assess end-use value.

INTRINSIC QUALITY

The last quality category to discuss involves the intrinsic qualities of grain and oilseeds; that is, the protein, oil, starch, and other components making up the actual grain or oilseed. These components often govern the end-use value of the grain or oilseed but are not always used to assess the market value.

Technological advances have opened new possibilities that will allow FGIS to measure in a timely and accurate manner, quality attributes that previously required time-consuming chemical laboratory procedures. However, having the capability to measure end-use quality factors may not itself result in the market using the information to assess market value. Since end-use quality needs of buyers differ with the intended use of the grain, the importance of a particular quality factor may vary throughout the market. The FGIS testing programs for wheat protein and sunflower seed oil provides the market with information used to assess the market value of Hard Red wheats and sunflower seeds. Since protein is of minimum importance to end users of Soft Red wheat, there is little demand for such testing.

In September 1989, FGIS implemented a nationwide testing program for measuring the oil and protein content in soybeans. This new testing capability should indicate how the market will react to new end-use quality information. The market now has access to accurate information on a marketwide basis which can be used, in part, to assess the value of soybeans. USDA is hopeful that the market will respond in a positive fashion resulting in a long-term upswing in the total oil and protein content of U.S. soybeans.

Improving the intrinsic characteristics of grain and oilseed requires the collective efforts of researchers, breeders, and producers combined with a market incentive for higher quality. The research community must conduct the basic research to identify and quantify the factors controlling intrinsic quality characteristics. This information, along with the development of rapid screening methods for the identified quality factors, is essential for breeders to make significant improvements in the intrinsic quality of U.S. varieties. The objective set forth in title IV of the bill complements the need for further research and testing development. Unfortunately, solely examining the financial priorities of ARS research will not likely enhance progress significantly.

The next step toward improving intrinsic quality focuses on ensuring that producers have access to information explaining the end-use quality potential of the variety they elect to produce. Farmers often have access to agronomic-type information on a variety. How well does the variety resist disease and drought? What is the expected yield? Unfortunately, little information is conveyed to the producer about the potential end-use quality of the variety. Consequently, the Department supports greater availability of end-use performance information. The concept of amending the Federal Seed Act as set forth in section 701 of S. 1977 would have marginal value in conveying end-use performance information. The Federal Seed Act applies to seed moving in interstate commerce; while only a fraction of seed wheat moves in interstate commerce.

The final and most important step toward improving intrinsic quality is market incentive. We can better identify the factors controlling quality, develop tools for

measuring these factors at the early stages of breeding, and inform the producer as to the potential end-use performance of a variety. However, the success of these efforts depends on whether the market creates an incentive for higher quality grain. For example, plant breeders can enhance the protein content of soybeans at the possible expense of other factors such as oil and yield. The relative value the market places on these factors (protein, oil, yield, etc.) will govern whether the intrinsic quality of soybeans increases. As mentioned earlier, FGIS now offers information on soybean protein and oil content.

Technological advances and a better understanding of grain quality will enable the grain standards and inspection system to better describe grain quality in terms of wholesomeness, physical condition, and intrinsic quality. We are confident this can occur without legislative action that may result in restricting the marketing of U.S. grain. FGIS continues to work with all segments of the grain industry to review its inspection procedures and grain standards. At least once every 5 years, FGIS reviews the grain standards and considers changes, as needed. On November 27, 1989, FGIS published a notice in the Federal Register announcing the intent to review the wheat standards and invited comments and suggested changes to the standard. Your comments, Mr. Chairman, and those of Senator Bond's received in response to the FGIS announcement, are being fully considered as we evaluate the need for changing the wheat standards. Other grains and oilseeds will also be reviewed this year or in the near future. We will be announcing shortly the beginning of a review of the soybean standards. As these standards are reviewed and changes are considered, FGIS will (1) adhere to the objectives for grain standards as established by the Grain Quality Improvement Act of 1986 in section 2 of the United States Grain Standards Act; (2) provide that the standards reflect levels of soundness and purity consistent with the needs of the major users of each grain; and (3) devote special attention to providing an incentive for all members of the grain industry to employ production, harvesting, transportation, storage, handling, and processing practices that result in cleaner U.S. grain and oilseeds.

In pursuing these objectives, FGIS will work closely with the Grain Quality Workshop and the various Government agencies involved with grain quality.

Section 103, Standardizing Unofficial Inspections, directs the FGIS Administrator to develop inspection procedures and approve inspection equipment for use by all grain handlers whenever a price adjustment is based on an analysis of grain quality relating to the U.S. grain standards.

The Department believes it is important to recognize that standardizing inspection results does not contribute to improving grain quality and will not guarantee fair treatment of producers. We believe the cost of implementing a program as set forth in section 103 could exceed the benefits.

As an alternative, the Department recommends working through the National Institute of Standards and Technology (NIST) to standardize grain inspection equipment used by industry. The National Type Evaluation Program (NTEP) is a program of cooperation between NIST, the National Conference on Weights and Measures, the States, and the private sector. NIST administers NTEP to approve weights and measures equipment for commercial (unofficial) use. This includes laboratory scales, vehicle scales, etc. Many States utilize approvals for their enforcement programs.

In addition, making grain inspection information more accessible to producers could contribute to achieving the overall objective of the subcommittee. FGIS maintains a list of approved equipment and publishes official inspection procedures in a grain inspection handbook. Making this information more available and understandable to producers will enable a producer to recognize when an elevator is using unapproved procedures or equipment to obtain inspection results. Several States have gone one step further by enacting legislation that provides both the buyer and seller the right to request an official inspection if the unofficial results are in question.

Major FGIS proposals are supported by an economic evaluation of costs and benefits, conducted in cooperation with analysts at the Economic Research Service (ERS). Attached for your information are one-page summaries of studies completed by ERS analysts in response to requests by FGIS (attachment 4). The final reports will be made available to the subcommittee. Economic analysis of the economic impacts are usually conducted on major changes in grading standards proposed by FGIS. We will rely on ERS to continue to provide economic support to FGIS for any future FGIS proposals to enhance the quality of U.S. grains.

Economic analyses of FGIS proposals to change grading standards and procedures have been limited in scope because research results on important economic relationships and basic economic data are not available. More basic research is needed to:

(1) quantify the relationship between the volume of U.S. grain exports and the relative quality of U.S. grain exported, (2) quantify price premium and discounts that U.S. exporters receive for grains having different quality attributes, and (3) develop cost estimates for cleaning grains at various stages of the marketing process. In order to conduct comprehensive analyses of costs and benefits, there is also a need for time series data on prices and qualities of grain exported by all major exporting nations.

We believe that additional research on these critical issues is necessary to enhance the quality of future analyses of costs and benefits. This would require additional funding to support cooperative research conducted jointly by ERS and other research institutions currently conducting research on grain quality issues. The research that is needed is long-term, basic research. We believe that the time needed for completing this work greatly exceeds the 180-day framework specified in the S. 1977 legislative proposal. Representatives to the Grain Quality Workshop concur with this assessment. Results obtained from this research are needed in order to conduct future analyses of costs and benefits associated with specific FGIS proposals to enhance grain quality.

In regard to the proposed changes set forth in titles VIII through XIV, the price support loan program, addressed in title VIII, is designed to support farm prices and aid in the orderly marketing of farm commodities. The program provides producers with short-term working capital during harvest until the commodity can be marketed in an orderly manner, as determined by the producer. Since the price support loan program is only a short-term investment by the producer, the price support program should follow, not lead the market. To that end, the Commodity Credit Corporation (CCC) schedule of loan premiums and discounts are reviewed and, if applicable, adjusted each year to reflect the average annual market premiums and discounts for certain quality factors.

For example, in 1989:

- Grade premiums were added for U.S. No. 1 wheat and U.S. No. 1 corn.
- Wheat protein premiums were increased to better reflect market conditions; they are available only for U.S. No. 3 or better.
- Moisture discounts were increased to better reflect the market conditions.
- Warehouse-stored grain grading Sample grade was determined to be ineligible to be pledged as collateral for price support loans.
- Farm-stored loan collateral delivered to CCC which grades Sample grade is discounted by an amount equal to 30 percent of the applicable loan rate.

A Farmer-Owned Reserve (FOR) grain loan, addressed in title IX, is a multiyear extension of the 9-month regular price support loan. As such, the normal quality adjustments with respect to loanmaking and settlement are one and the same. Currently, grain grading Sample grade is ineligible for entry into the FOR.

Regarding title X, CCC does not agree that legislation should prohibit the blending of CCC-origin lower quality grain with grain intended to be marketed as U.S. No. 1, 2, or 3. Such blanket prohibition that CCC-origin lower quality grain will never be used for blending to fulfill bona fide quality requirements of a commercial user. The marketplace is the appropriate arena to determine user requirements through means of commercial contracts written by users. CCC has promptly and vigorously administered policies that emphasize grain quality and CCC will continue its efforts to foster policies that are consistent with the broad goals of improving grain quality.

The proposed title XI would apparently authorize the Secretary of Agriculture to encourage exporters of U.S. grain that intend to request the payment of bonuses under the Export Enhancement Program (EEP) to incorporate special clauses in their sales contracts with foreign buyers which would facilitate the export of higher quality grain. For example, a sales contract with a buyer which would normally allow 1.0 percent foreign material in wheat shipments from the United States would be changed to stipulate that the grain must contain no more than 0.5 percent, thereby cutting the maximum allowable level of foreign material in half.

The Foreign Agricultural Service believes this approach would be counterproductive to the objective under EEP of increasing export sales of U.S. agricultural commodities. Foreign buyers may be discouraged from purchasing U.S. grain if they feel that they are being pressured to purchase a higher quality grain than they need or desire. Under the EEP as currently operated, as long as the grain to be exported complies with the U.S. Grain Standards Act, the exact quality to be specified in the sales contract will be negotiated between the U.S. exporter and the buyer. The Foreign Agricultural Service will review the sales price to determine if a bonus should be paid to facilitate the sale. Stipulating higher quality grain would increase the EEP bonus rate thereby increasing EEP program costs.

EEP bonuses are authorized to be paid only in connection with sales to buyers in certain targeted countries where U.S. grain is encountering unfair competition as a result of trade-distorting practices by foreign countries. The bonuses enable U.S. exporters to sell their grain at prices which are competitive with the sales prices of grain exported to the same market by such countries. There is no basis for using bonuses under the EEP to upgrade the quality of the exported commodity.

We also oppose the proposed amendment (title VIII) to section 105(A) of the Disaster Assistance Act of 1989 to provide disaster payments for grain quality losses.

Determining compensation for quality losses in grain would be extremely difficult, if not impossible, in some instances. Application of regional marketing differentials and quality determinations for grain not harvested are but two examples. Furthermore, the budget exposure for this program could be prohibitive, given the elusiveness of accurate determinations of quality loss.

Grain that has deteriorated because of adverse weather conditions, pests, or disease conditions will retain some feed value. Thus, producers will not suffer a total crop loss. Implementing such a program would set a bad precedent by sending the wrong signal to producers, i.e., that USDA is providing "no-risk" farming.

Finally, the Department does not agree that another government program is needed by producers and elevator operators for installing or improving existing cleaning, drying, or storage equipment. There are sufficient financial lending institutions available for producers and elevator operators who wish to install or improve existing equipment.

In closing, Mr. Chairman, we again appreciate the opportunity to discuss grain quality issues, actions taken thus far by the Department, future planned actions, and our response to the proposed legislation. We plan to continue working with the Congress, other Federal agencies, and the grain industry to improve grain quality.

[Attachments 1-4 follow:]

ATTACHMENT 1—SUMMARY OF RESPONSES TO CCC

SUMMARY OF RESPONSES TO REQUEST FOR PUBLIC COMMENT QUALITY ADJUSTMENTS TO 1990-CROP LOAN RATES

A request for public comment was published in the Federal Register on November 14, 1989, regarding quality adjustments to the 1990-crop wheat, feed grains, and soybean loan rates. Eighteen comments were received by the end of the comment period (January 16).

Source of comments	Numbers received
Members of Congress.....	2
State ASC office.....	1
Private companies.....	4
State commissions, associations, universities.....	6
National associations.....	5
Total comments.....	18

SUMMARY OF MAJOR COMMENTS

The following summary of comments is a broad-brush review of opinion received. Many letters contained recommendations of a technical nature regarding individual quality-factor adjustments. Such information is omitted from this summary. Although the total number of responses was modest, the technical nature of some responses will be very helpful and will receive careful attention in establishing the 1990 loan rate adjustments.

1. *Market versus Non-market Adjustments.*—Most comments received from industry favor loan adjustments based on market valuations of quality factors. The two Congressional letters expressed the need for more sizable quality-incentive adjustments. It was suggested that when market prices are significantly above loan levels, loan adjustments may be ineffective in altering producer behavior affecting grain quality. One comment favored clean-grain premiums based on the cost of cleaning grain.

2. *Frequency of Setting Loan Adjustments.*—Several comments favored establishing loan adjustments more frequently than annually so as to more accurately reflect market values. Some support was guarded due to the administrative difficulties which frequent adjustments would entail. Some comments favored applying current market adjustments upon delivery rather than when the loan is disbursed.

3. *National/Regional Loan Adjustments.*—Comments were mixed. There is concern over the administrative burden of regional adjustments but recognition that market valuations of some quality factors may vary by region. Some comments were received that regional adjustments may be appropriate for only selected quality factors and that national adjustments could remain for other factors.

4. *Weed-Control Discounts.*—Comments were mixed, some favoring the abolition of these discounts which are seen as duplicating other factor or grade discounts. Others favored their continuation because weed-seed content is an important grading factor.

5. *Deduct Foreign Material (FM) and Dockage From Loan Quantity.*—Some comments support deducting dockage from loan eligible quantities but support for deducting foreign material was mixed. The deduction of foreign material needs to be addressed separately for different grains, according to one comment, and another suggests premiums for less than average FM, dockage, or shrunken/broken kernels.

6. *Moisture Discounts.*—Several specific comments regarding maximum allowable moisture levels for different grain were received. One suggestion was that moisture discounts be based on total shrink, the reduction of weight from moisture and grain loss resulting from drying grain.

7. *Special Grade Discounts.*—Comments were mixed regarding continuation of fixed discounts for special grades with some support for variable discounts. Others suggested consideration of (1) whether discount scales are determinable, (2) whether the special grade condition is correctable, and if so, the cost of such corrective action, and (3) whether the special grade condition causes the grain to be of reduced value.

8. *Wheat Protein Adjustments.*—Comments were mixed. Some support for continuing the 1989 protein adjustments was expressed; another suggested a far simpler schedule; still others recognized the difficulty in setting adjustments for this factor in advance of the crop and proposed (1) using county average values at the time of a loan forfeiture, or (2) minimizing protein premiums at time of loan placement.

9. *Price Support Rates by Class.*—Few comments were received regarding loan rates by class. One comment favored class wheat loan rates; another suggested that if class rates for wheat are established, the 1989-crop protein adjustments should be continued for all classes. Mixed comments were received regarding the adjustments for Hard Amber, Amber, and Durum wheats.

10. *Sample Grade Discounts.*—Most comments favored continuation of the discounts established for the 1989 crop. Some commented that discounting for sample grade and for the factors causing the sample grade was excessive. Another comment was that sample grade wheat should be discounted to its feed value.

11. *Grade as the Basis for Loan Eligibility or Loan Adjustment.*—Comments were mixed. One favors restricting loan eligibility to the higher, non-feed use grades, namely grades 1-3 of wheat, sorghum, barley, and soybeans. Another favors establishing a recourse loan for feed-grade grain. One suggests that grade adjustments be replaced with factor-specific adjustments and another suggested that feed-grade wheat be loan eligible but discounted to the value of feed.

12. *Test Weight Discounts.*—Comments were mixed regarding whether the current schedule of test-weight discounts should be continued. Those suggesting change provided recommended levels.

13. *Farmer-Owned Reserve (FOR) Quality Adjustments.*—Some comments favored establishing higher minimum grade requirements for FOR entry than for loan eligibility. Some favored spot, others mandatory inspections or mandatory rotation of FOR grain for quality maintenance. One comment favored that storage payments be adjusted to cover the costs of quality maintenance of FOR quantities. Another suggested that reserve release policies be based on market demand by class and quality.

Comments were mixed as to whether inspections of farm-stored grains should be required.

ATTACHMENT 2—MAJOR GRAIN QUALITY ACCOMPLISHMENTS

FGIS GRAIN QUALITY INITIATIVES

GENERAL

STANDARDS

Tightened insect tolerances (May 1, 1988).

REGULATIONS

Amended regulations under the U.S. Grain Standards Act to prohibit recombining or adding dockage or foreign material to any grain and dust removed from grain collected into a bin at export elevators at export port locations (June 30, 1987).

PROCEDURES

Preparing revisions to improve the performance of the shiplot inspection plan used to determine the quality of export shipments.

STUDIES

Prepared a report to Congress on the Study of Uniform End-Use Value Tests based on a survey of 178 domestic and 89 foreign end-users of grain (June 21, 1988).

RESEARCH

Objective odor determinations.
Detection of hidden insect infestation.
Single kernel moisture determinations.
Chemical residue analysis.

WHEAT

STANDARDS

Dockage reported to the nearest one-tenth of a percentage point (May 1, 1987).
Included 32 insect damaged kernels per 100 grams as U.S. Sample grade criteria (May 1, 1988).
Divided the class White wheat into two classes, Hard White wheat and Soft White wheat (May 1, 1990).
Will conduct a general standards review during fiscal year 1990. Published an advance notice of the wheat review in the Federal Register on November 27, 1989.

PROCEDURES

Protein reported on a constant moisture basis of 12.0 percent (May 1, 1987).
Enhanced the protein monitoring program (May 1987).
Annually revise and implemented new calibration for near-infrared reflectance (NIR) instruments for measuring protein.
Revised inspection procedures to improve the detection of treated seeds in export shipments (September 4, 1987).
Expanded aflatoxin testing procedures to include export wheat shipments in response to export contract requirements (November 15, 1988).
Revised falling number (FN) testing procedures to better determine uniformity of export shipments by offering FN based on the averaging of sublots (January 11, 1989).
Published instructions for TCK smut analysis (January 4, 1989).

STUDIES

Prepared a report to Congress on the effects of combining dockage and foreign material as a single grade factor (June 1, 1989).
Evaluating the need for hardness testing.

RESEARCH

Objective wheat classing.
Improved dockage testing procedures.

Comparison of Falling Number test to Stirring Number test.

CORN

STANDARDS

Included definitions for the components of broken corn and of foreign material (July 30, 1987).

General standards review is scheduled for fiscal year 1991.

PROCEDURES

Revised aflatoxin testing procedures to detect aflatoxin at levels of 10, 100, 200, and 300 parts per billion in response to contract requirements and FDA guidelines (January 12, 1989).

Approved commercially available aflatoxin test kits for official use (October 1, 1989).

STUDIES

Impact of establishing grading factors for broken corn and foreign material.

RESEARCH

New methodologies for quantifying the presence of aflatoxin.

Devices for breakage susceptibility determinations.

Redefining broken corn and foreign material based on nutritive value of grain.

Developing calibration constants for near-infrared reflectance (NIR) instruments for measuring starch, oil, and protein.

SOYBEANS

STANDARDS

General standards review is scheduled for fiscal year 1990.

PROCEDURES

Revised interpretive line for mold damage to meet the National Soybean Processors Association and Federation of Oils, Seeds, and Fats Association trading rule of 0.75 percent free fatty acid (August 1, 1986).

Provided for the determination of shriveled and wrinkled soybeans in response to drought conditions (September 16, 1988).

Expanded aflatoxin testing procedures to include export soybean shipments in response to export contract requirements (November 15, 1988).

Implemented oil and protein testing as official criteria (September 4, 1989).

RESEARCH

Toxicity of five types of weed seeds in soybeans. The weeds are Black nightshade (*Solanum nigrum*), Velvet leaf (*Abutilon theophrasti*), Sicklepod (*Cassia tora* L.), Jimsonweed (*Datura stramonium*), and Morning glory (*Ipomea violacea*).

Value of shriveled and wrinkled soybeans.

SORGHUM

STANDARDS

Included definition for broken kernels and for foreign material (July 30, 1987).

Preparing to propose changes regarding classification terminology, acceptable percentage of brown sorghum in yellow sorghum, and grade limits for broken kernels and for foreign material.

General standards review is scheduled for fiscal year 1991.

PROCEDURES

Expanded aflatoxin testing procedures to include export sorghum shipments in response to export contract requirements (November 15, 1988).

STUDIES

Evaluated the impact of revising sorghum grades to reduce the percentage of brown sorghum kernels allowed in yellow sorghum from 10.0 percent to 3.0 percent.

Evaluated the impact of revising sorghum grades to report the percentage of broken kernels and the percentage of foreign material as two separate grade determining factors.

BARLEY

STANDARDS

Amended the standards by revising the definition of Sample grade, damaged kernels, and classes of malting barley; and by revising certain names of terms relating to damaged or injured kernels (June 30, 1987).

RESEARCH

Developing calibration constants for near-infrared reflectance (NIR) instruments for measuring protein.

SUNFLOWER SEED

PROCEDURES

Developed and implemented new calibration for nuclear magnetic resonance (NMR) instruments used to determine oil content (February 22, 1989).

Developed an interpretive line slide to aid in determination of mold-damaged sunflower seed (February 1989).

RAPESEED/CANOLA

STANDARDS

Developing official standards.

ATTACHMENT 3—CANADIAN TARIFFS FOR CLEANING WHEAT

MAXIMUM TARIFF—TERMINAL ELEVATORS

Item and Service (column I)	Basis (column II)	Rate (column III)
2. Storage (including insurance against fire and inherent explosion), for each day or part thereof:		
(a) Wheat (including Durum)	Per tonne.....	\$0.039
(b) Oats.....	Per tonne.....	0.064
(c) Barley.....	Per tonne.....	0.048
(d) Rye.....	Per tonne.....	0.041
(e) Flaxseed.....	Per tonne.....	0.046
(f) Canola.....	Per tonne.....	0.047
(g) Rapeseed.....	Per tonne.....	0.047
(h) Corn.....	Per tonne.....	0.043
(i) Sunflower seed.....	Per tonne.....	0.104
(j) Soybeans.....	Per tonne.....	0.039
(k) Other grains or screenings.....	Per tonne.....	0.047
3. Special services:		
(1) Cleaning:		
(a) For removal of dockage:		
(i) Wheat (including Durum)	Per tonne.....	2.63
(ii) Oats.....	Per tonne.....	4.31
(iii) Barley.....	Per tonne.....	3.26
(iv) Rye.....	Per tonne.....	2.76
(v) Flaxseed.....	Per tonne.....	4.14
(vi) Canola.....	Per tonne.....	4.21
(vii) Rapeseed.....	Per tonne.....	4.21

MAXIMUM TARIFF—TERMINAL ELEVATORS—Continued

Item and Service (column I)	Basis (column II)	Rate (column III)
(viii) Corn.....	Per tonne.....	2.89
(ix) Sunflower seed.....	Per tonne.....	9.33
(x) Soybeans.....	Per tonne.....	3.51
(xi) Other grains or screenings.....	Per tonne.....	3.63
(b) For removal of other grain carrying a return for such other grain (machine separation cars) in addition to charges, if any, under paragraph (a), all grain.	Per tonne.....	2.86
(2) Special machine separations: Separations of mixed grains or straight grains to improve grade, all grain.	Per tonne.....	2.86

ATTACHMENT 4—SUMMARIES OF ERS STUDIES

ECONOMIC IMPLICATIONS OF ALTERNATIVE METHODS OF CERTIFICATING DOCKAGE IN U.S. WHEAT

The cleanliness of U.S. wheat exports became an issue during the early 1980's. The method used to certificate dockage on U.S. grade certificates was identified as one source of complaints. In 1984, FGIS proposed rounding wheat dockage to the nearest 0.5 percentage point on U.S. grade certificates, a change that would have reduced undisclosed dockage in wheat by 50 percent. In 1985, the FGIS Industry Advisory Committee recommended that FGIS consider certificating dockage content in 0.1 percent increments, a method that would fully disclose the amount of dockage present in wheat.

FGIS requested that ERS conduct an analysis of the economic implications of adopting one of the two alternatives during 1985. The study focused on price changes and impacts for individual classes of wheat under three market behavior scenarios. The study revealed that the economic impact of adopting one of the proposed methods of dockage certification would be small, and that there could be several potential benefits if the adoption resulted in an overall reduction in the average dockage content of U.S. wheat.

The analysis revealed that the economic impact would be small. Under average market conditions, the economic impact of adopting the 1984 FGIS proposal was estimated to total \$13.3 million, less than 0.4 of a cent per bushel. In contrast, the impact of adopting the 1985 Advisory Committee proposal was estimated at \$1 million. Market price quotations for clean wheat would increase, and this would offset the weight reductions resulting from a higher level of certificated dockage.

Several potential benefits of adopting one of the proposals were identified by the study. The major benefits were: (1) more accurate description of the raw grain on U.S. grade certificates; (2) improved quality maintenance during storage; (3) improved market pricing efficiency by rewarding sellers who deliver clean wheat; (4) removal of existing economic incentives to blend wheat containing dockage with clean wheat; (5) elimination market subsidy to producers who deliver wheat with a higher-than-average dockage content; and (6) improved competitive position of U.S. wheat in world markets.

The study pointed out the difficulty of measuring the economic value of these benefits. It concluded that developing and maintaining a strong export market depends upon delivering a clean, high quality product along with a grade certificate that accurately describes the physical and biological condition of the grain. The export market is highly competitive, and if a buyer judges price and other important quality characteristics to be about equal, his decision may come down to one of cleanliness.

ECONOMIC EFFECTS OF STANDARDIZING WHEAT PROTEIN REPORTING

Protein content of U.S. wheat was traditionally reported on an "as-is" moisture basis. Reporting protein in this manner became a concern of many buyers because the protein content varied inversely with the moisture content. In an effort to provide inspection results which are easier to evaluate and compare, the Federal Grain

Inspection Service (FGIS) began reporting protein content on a constant 12-percent moisture basis as of May 1, 1987.

The U.S. Department of Agriculture's Economic Research Service conducted a study of this change in protein reporting. Study objectives were: (1) to document the change in nominal wheat protein reported in important producing States and (2) to assess the economic effects on producers.

Study results indicated that nominal wheat protein readings were not significantly affected at the national level by the change in protein reporting procedure. However, protein levels for most Hard Red Winter (HRW) wheat production had a lower nominal protein percentage when reported under the new standardized moisture base, while most Hard Red Spring (HRS) wheat had a slightly higher nominal protein percentage. Reported protein, under the standardized protein reporting system, declined by an estimated average of 0.05 percent for eight major HRW wheat States, and HRS wheat protein increased by an estimated average of 0.01 percent for five major HRS wheat States. The new recording procedure reduced nominal protein for HRW and HRS wheat exports by about 0.1 percent in 1987. Thus, the effects of this change appeared to be spread unevenly throughout the system.

Two scenarios regarding the economic effects to producers were analyzed. Under scenario A (the producer absorbs full loss or gain), farmers at the national level would experience an overall average loss of \$0.01 per bushel for HRW wheat. In contrast, HRS wheat producers would notice little change on average. However, changes were more apparent at the State or local level. Producers in the Northwest would lose, while those in the North Central States would gain.

Based on results from scenario B (market premiums adjust to reflect the change in protein certification procedures), protein premiums should rise in those markets where nominal protein declined, and vice versa. Thus, the calculated losses or gains as shown under scenario A would be reduced by the markets' adjustment in protein premiums. However, wheat protein premiums for a period of 8 months (May through December 1987) in the Portland and Minneapolis markets indicate that adjustments were not immediately observed. The Kansas City market tentatively supported the adjustment hypothesis. Exact quantification of the markets' adjustment was not possible due to the short time span between the changes in procedure and time of analysis.

Changes in nominal protein would not significantly change the protein premiums for price support loans because CCC premiums are changed on the basis of 0.5 percent. For example, protein premiums could remain the same or drop as much as \$0.02 per bushel for the HRW States analyzed. For the HRS States, many of the premiums would remain unchanged, but Idaho and Washington producers could experience a decline by as much as \$0.03 per bushel.

ECONOMIC IMPACTS OF CHANGES IN THE SHIPLLOT INSPECTION PLAN PROPOSED BY THE FEDERAL GRAIN INSPECTION SERVICE

Major changes in the shiplot inspection (Cu-Sum) plan proposed by FGIS include: (1) revising breakpoint allowances for quality factors, (2) limiting field review inspection to only one level, (3) requiring an average of review inspection results with the original results, (4) redefining the material portion to include the subplot causing the Cu-Sum value to exceed the breakpoint plus the sequence of previously inspected consecutive sublots with factor results greater than the grade limit, and (5) replacing the Protein Uniformity Inspection Plan (PUIP) by including protein under the Cu-Sum plan.

The cost of changing the shiplot inspection plan (Cu-Sum Plan) as proposed by the Federal Grain Inspection Service (FGIS) that would be borne by the U.S. wheat, corn and soybean industries would likely range from \$15.5 million to nearly \$18 million under fiscal year 1987 conditions. The actual cost would depend on the option (additional cleaning vs. blending with better quality grain) elected by the exporters to reduce broken corn and foreign material (BCFM) for corn and foreign material (FM) for soybeans. Costs to the industries would total \$85.6-\$88.0 million under the naive, highly unlikely scenario in which the exporters make no effort to improve grain quality.

Under the base scenario—a likely case—the proposed changes in the Cu-Sum Plan would cost the industries about \$15.5-\$18.0 million assuming the industries would immediately improve their grain quality enough that the risk of having their export grain rejected under the proposed Cu-Sum Plan is no greater than under the current plan. On a per-exported-bushel basis, the cost is very small—0.44 cents for wheat, 0.57 cents for corn, and 0.56 cents for soybeans. Under a transition scenario, the impact could reach \$24-\$27 million if the risk of a subplot being rejected doubled under the proposed plan and the rejected sublots of grain had to be unloaded from

the ship or recycled from shipping bins. Under the naive, highly unlikely scenario, the impact could reach \$86-\$88 million if the exporters chose not to improve grain quality over current levels and all grain that failed the inspection had to be unloaded or recycled, and eventually still needed quality improvement in order to pass through the inspection.

Higher quality U.S. export grain and oilseeds resulting from the proposed Cu-Sum plan could bring benefits (higher export prices or enhanced competitiveness in world markets) which could offset or even outweigh the costs of improving grain quality. In the case of wheat protein, the benefit of improving wheat protein under the proposed plan is estimated at \$5.2 million, compared to a \$4.1 million cost of improving the quality factor.

ECONOMIC IMPACTS OF SEPARATING AND TIGHTENING THE COMBINED LIMITS ON BROKEN KERNELS AND FOREIGN MATERIAL FOR SORGHUM

In June 1986, participants in the Grain Quality Workshops proposed that the grading factor broken kernels and foreign material (BNFM) be reported as two separate grade determining factors (BN and FM) and that combined grade limits on BN and FM be tightened. This report presents estimates of the economic impacts of various options for separating BN and FM and tightening the combined limits for these factors.

The current grade standard for U.S. No. 2 grain sorghum allows a total of 8 percent of BN, FM, and other grains, which are combined into a grade determining factor BNFM. Alternatives to the current standard being considered by FGIS include: (1) separating BNFM into two grade factors, one each for BN and FM, and keeping dockage as a deductible; (2) making BN and a combined FM and dockage separate grade factors; and (3) separating BN as a single grading factor and treating the combined FM and dockage as a weight deductible.

FGIS sorghum inspection data from August 1987 through 1988 show that under the current grade limits on BNFM, 100 percent of the export lots and 94.4 percent of the domestic lots inspected were graded U.S. No. 2 or better. However, only 47.5 percent of domestic sorghum sales would be graded No. 2 or better under the Grain Quality Workshops' proposal, Option 1. Similarly, only 45.0 percent of exports would be graded No. 2 or better under this option. BN was the primary factor contributing to the grade reduction under Option 1.

Option 2, which treats BN and combined FM and dockage as two separate grading factors, would result in grade reduction in a larger percentage of inspections than Option 1.

Option 3, which regards BN as a single grading factor, would result in fewer grade reductions than the other options for both domestic and export inspections. However, a greater amount of FM and dockage would be deducted via weight reduction.

Costs of the alternative options range from \$4.4 million to \$26.2 million, depending on the option adopted and actions taken by the sorghum industry. Under the choice of blending to improve grain quality, costs of the alternative options range from \$11.0 million for Option 1 to \$14.4 million for Option 3. In contrast, costs of the alternative options through cleaning range from \$4.4 million for Option 3 to \$6.5 million for Option 2. Costs of the alternatives would be the greatest if the industry chooses to do nothing and accept reductions in grade—ranging from \$21.7 million for Option 1 to \$26.2 million for Option 3. In all likelihood, however, costs of the alternatives would fall between \$4.4 million and \$14.4 million because the industry would probably use some combination of blending and cleaning to improve grain quality in order to avoid the reduction in grade.

DOCKAGE AND FOREIGN MATERIAL IN THE GRADING STANDARDS FOR WHEAT EXPORTS

The U.S. Grain Standards Act Amendments of 1988 required a study exploring the effects of combining dockage and foreign material into a single grading factor for wheat (both factors defined below). This report focuses on the economic effects that such a new standard—either as a grade limit factor or as a deductible factor—would have on wheat producers, handlers, and exporters.

The United States is the only major exporter that measures and reports dockage as a quality factor separate from foreign material. Other exporters who use a State marketing system clean their wheat of such material before it leaves the export facility. Dockage, although reported on the inspection certificate, does not serve as a grading factor. It is distinguished from foreign material on the basis of particle size, weight, and ease of mechanical removal from a sample of wheat. The marketing or inspection agencies in other major exporting countries report only one measure of

nonmillable material. Therefore, some importers are not comfortable distinguishing dockage and foreign material, and some importers have stated a preference to having them combined as a factor, as they are treated similarly in the milling process. Domestic millers, on the other hand, are quite comfortable with dockage as a measure. The grain that they purchase is not required to be graded so they assign discounts/premiums to factors to specify the quality they want. If adopted, the combined grading factor would primarily affect the U.S. export market.

Dockage content now appears as a negotiable item in many export contracts. Some Pacific Rim importers, such as Taiwan and Japan, have enforced strict discounts on excessive dockage. The proposed change, which would eliminate dockage as a separate factor, would permit more uniformity in export contracts. It may also encourage producers and exporters to dispatch cleaner grain which would assist in maintaining or even expanding the U.S. market share.

The economic effects of adopting a grading factor that combines dockage and foreign material were estimated for both its enforcement as a grade-determining factor and as a deductible factor. An implicit assumption in this analysis was that players in the wheat market would not immediately modify their behavior with respect to the revised grading standards. This is clearly a restrictive assumption, and, thus, the results should be regarded as maximum figures.

Considering all options, the addition of dockage to the foreign material grading standard would cost the wheat industry \$5.5-\$27.5 million, depending on the year examined for the study. These amounts are between 0.1-0.6 percent of annual value of U.S. wheat export sales. Discounting practices and price differentials in the market would likely adjust under a new grading environment. Producers could probably shift some of the cost burden, depending upon the relative market strengths of producers, exporters, and consumers.

[Responses of Jo Ann R. Smith to the questions from Senators Daschle, Lugar, and Boschwitz, follow:]

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, DC, March 20, 1990.

The Honorable PATRICK LEAHY,
Chairman, Committee on Agriculture, Nutrition, and Forestry, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: Thank you for the opportunity to respond to the questions from Senators Boschwitz, Daschle, and Lugar regarding grain quality raised in your letter of February 28, 1990. Enclosed for your consideration are our responses to the questions.

Sincerely,

JO ANN R. SMITH,
Assistant Secretary,
Marketing and Inspection Services.

Enclosure.

RESPONSES TO SENATOR DASCHLE

GRAIN QUALITY LEGISLATION

GRAIN CLEANING COST

Question 1. Section 201 of S. 1977 proposes that, "Not later than 5 years after the date of enactment of this section, the Administrator [of FGIS] shall enforce limits on easily removable nongrain material in grain for grades number 1, 2, and 3 that shall be comparable to levels of cleanliness met by major competing grain exporting nations as determined by the Administrator." This provision has generated discussion over its costs and benefits and how the costs and benefits might be distributed.

If cleaner grain is to be exported, at what points in the grain industry (from farmer, to country elevator, to subterminal, to export terminal) is cleaning most economically done, considering the costs of the cleaning operation and revenue from screenings or liftings? What is an estimate of the net costs?

Answer Mrs. Smith. We interpret the term "easily removable nongrain material in grain" to refer to dockage in grains such as wheat. In order to determine costs of cleaning and the revenue from screenings or liftings, we must establish the cost of cleaning at various stages of the marketing system. The Department of Agriculture (USDA) has not conducted any research recently to determine the costs of cleaning

grain. However, there are examples of grain elevators which paid premiums for cleaner grain. The structure of the U.S. grain marketing system tends to make the first gathering point for grain the most efficient location to clean grain.

In our testimony, a study of cleaning costs was one of the four areas of basic research that we identified that must be conducted before comprehensive cost and benefit analyses of changes in grading standards and procedures can be made.

BENEFITS FROM IMPROVED GRAIN CLEANLINESS

Question 2. Information has come to the attention of the subcommittee that there are benefits throughout the handling, transport, and processing sectors from improved cleanliness of grain.

(a) Are the 14 items listed below valid claims or benefits from cleaner grain?

(b) Do data exist that quantify those benefits?

(c) If data do not exist, what is the expert opinion of the USDA concerning the relative magnitude of benefits compared to costs for the U.S. grain industry from improved grain cleanliness?

1. Reduces a major source of insect habitat and infestation which leads to damaged kernels and insect fragments (which diminish the value of grain).

Answer Mrs. Smith. (a) The claim is valid and has been documented for insects and dockage in wheat. Insect activity can lead to hot spots in the grain, musty odor, and creation of fine material which leads to poor aeration. The existing literature identifies temperature, moisture, and dockage as key variables in the life cycle and reproduction of insects in wheat. Dry, clean wheat is unfavorable for the reproduction of insects, and dockage and dust components of a grain mass are important factors affecting the reproduction and survival of insect pests. In general, the number of insects present in stored wheat is proportional to the percentage of available dockage.

(b) Data are not available to quantify the benefits in terms of economic losses.

2. Reduces the need for costly fumigants (accompanied by human exposure risks and possible residue contamination).

Answer Mrs. Smith. (a) The claim is valid.

(b) Data are not available to quantify the benefits in terms of economic impacts.

3. Reduces the danger of elevator explosions.

Answer Mrs. Smith. (a) The claim is valid.

(b) Data are not available to quantify the benefits in terms of economic impacts.

4. Reduces worker health problems from dust irritation and allergies.

Answer Mrs. Smith. (a) The claim is valid.

(b) Data are not available to quantify the benefits in terms of economic impact.

5. Reduces elevator shrink.

Answer Mrs. Smith. (a) The claim is questionable.

(b) Data are not available to quantify the benefits in terms of economic impact.

6. Reduces the presence of quarantine weed seeds (that the Soviets expressed substantial concern about).

Answer Mrs. Smith. (a) The claim may be reasonable given that in removing dockage, the quarantine weed seeds found in the dockage would also be removed.

(b) Data are not available to quantify the benefits in terms of economic impact.

7. Reduces the need to use oil for dust control (which itself may trap pesticide residues and lower flour yield).

Answer Mrs. Smith. (a) The need for dust control measures would be reduced and limited data exists to show that flour yields are reduced when oil is used for dust control.

(b) Data are not available to quantify the benefits in terms of economic impact.

8. Reduces problems of pollution and dust control at overseas receiving terminals.

Answer Mrs. Smith. (a) The claim is valid.

(b) Data are not available to quantify the benefits in terms of economic impact.

9. Reduces grain drying costs.

Answer Mrs. Smith. (a) The claim is valid.

(b) Data are not available to quantify the benefits in terms of economic impact.

10. Improves air circulation in storage bins (which maintains grain in better condition).

Answer Mrs. Smith. (a) The claim is valid.

(b) Data are not available to quantify the benefits in terms of economic impact.

11. Improves cargo uniformity (which is very important to overseas buyers).

Answer Mrs. Smith. (a) The claim is valid.

(b) Data are not available to quantify the benefits in terms of economic impact.

12. Reduces freight costs.

Answer Mrs. Smith. (a) The claim is valid.

(b) Ocean freight is paid by buyers and the cost depends upon the amount of dockage, location of the buyer, and the current level of ocean freight rates.

13. Reduces import duties paid by some overseas buyers.

Answer Mrs. Smith. (a) The claim is valid.

(b) The buyer saves import duties and the cost depends upon the amount of dockage, location of the buyer, and the current level of import duties.

14. Improves product yield from each bushel of grain purchased.

Answer Mrs. Smith. (a) The claim is valid.

(b) Additional analysis is needed to establish the exact relationship between dockage levels (or foreign material in soybeans) the product yield.

(c) The economic impact depends upon the level of dockage and the relative value of the products. It may not be economical for domestic millers to buy cleaned wheat since the wheat is thoroughly cleaned at the mill anyway.

Answer Mrs. Smith. 1-14 (c) The various aspects of cleaner grain have been studied by numerous sections of the grain industry. Although these studies have documented the benefits of cleaner grain, the studies usually stop short of quantifying the economic impact. Furthermore, to our knowledge, no single study examines all aspects of grain cleaning and provides a comprehensive summary. This work needs to be done.

Considering the tangible benefits plus the intangible of customer satisfaction that result from cleaning grain, we feel that the benefits outweigh the costs.

RESPONSES TO SENATOR LUGAR

CANADIAN TARIFFS FOR CLEANING WHEAT

1. In your testimony on February 8, you noted that the current tariff for cleaning wheat at terminal elevators in Canada is about U.S. \$0.06 per bushel.

Question (a). Were the United States to adopt standards for cleanliness similar to those of the Canadians, is it reasonable to expect that cleaning costs on a per-unit basis would be similar?

Answer Mrs. Smith. USDA has not conducted any research to evaluate this statement. However, regional studies conducted by Kansas State University in 1984 showed the cost of dockage removal ranged from \$0.026 to \$0.137 per bushel depending upon the location of cleaning and the thoroughness of cleaning. The cost calculations included variable costs and equipment but not the fixed costs of land and buildings. The lowest cleaning costs were found at country elevators with dockage levels reduced to below 0.5 percent. The highest cleaning costs were found at export locations, using the Canadian cleaning system. Country elevator operators that clean grain and studies of cleaning at local elevators estimate the cleaning cost at \$0.03 to \$0.05 cents per bushel.

It is difficult to compare the cleaning costs between the United States and Canada. For example, a portion of the Canadian rail transportation cost is subsidized for producers. The grain producing provinces are feed surplus areas with little demand for cleanings. Thus, grain is cleaned at export terminals and the cleanings sold to markets in the United States.

Question (b). What would be the total cost of cleaning for the U.S. wheat industry?

Answer Mrs. Smith. This would depend upon the per-unit cost, and we have not conducted studies of cleaning costs. Total wheat production in 1989 in the United States was 2.035 billion bushels or 55.4 million metric tons. Assuming the total production was cleaned at country elevators and the cost was similar to the Canadian tariff quoted above, at U.S. \$0.06 per bushel or U.S. \$2.20 per metric ton, the cost would have been U.S. \$121.8 million.

Question (c). In Canada, are these costs ultimately borne by government or by producers?

Answer Mrs. Smith. We understand that the tariff for cleaning is reflected in a lower price to producers. Canadian wheat producers are assessed a cleaning charge upon delivery for removal of dockage which is currently a maximum tariff of U.S. \$2.21 per metric ton.

Question (d). By whom would the costs likely be borne in the United States if cleaning became a necessity?

Answer Mrs. Smith. The costs will be divided between producers and importers, depending on the willingness of importers to pay more for cleaner grain. If the price rises by more than the cost of cleaning, farmers would benefit rather than bear a

cost. Without further study, it is difficult to know whether the benefits of cleaning grain would outweigh the costs, as noted above.

RESPONSES TO SENATOR BOSCHWITZ

WHEAT AND CORN EXPORTS TO THE SOVIET UNION

Question 2. (a) Is it true that the Soviets generally buy U.S. No. 2 wheat and No. 3 corn?

Answer Mrs. Smith. The Soviets generally buy U.S. No. 2 wheat and No. 3 corn. During fiscal years 1988, 1989, and 1990 through February 15, 1990, all wheat shipments, except for two, were U.S. No. 2 or U.S. No. 2 or better. During the same time period, all corn shipments were graded U.S. No. 3 or U.S. No. 3 or better (see notes below).

Question (b). How does the quality of grain sold to the U.S.S.R. actually compare with the requirements of the Soviet contract specifications, with respect to the following factors: for wheat, total damage, foreign material, shrunken/broken kernels, total defects, and dockage; and for corn, test weight, moisture, heat damage, total defects, and broken corn and foreign material?

Answer Mrs. Smith. Please see the data below.

HARD RED WINTER WHEAT—AVERAGE FACTOR RESULTS FOR FY 1988, 1989, AND 1990

Factor	U.S. No. 2 grade limit	U.S.S.R. FY-88	U.S.S.R. FY-89	U.S.S.R. FY- 90 to 2/15
Total damaged kernels.....	4.0	1.2	1.1	1.4
Foreign material.....	1.0	0.3	0.3	0.3
Shrunken and broken.....	5.0	2.6	2.7	1.9
Total defects.....	5.0	4.1	4.1	3.5
Dockage.....	(¹)	0.7	0.8	0.8

¹ Nongrade.

HARD RED SPRING WHEAT—AVERAGE FACTOR RESULTS FOR FY 1988, 1989, AND 1990

Factor	U.S. No. 2 grade limit	U.S.S.R. FY-88	U.S.S.R. FY-89	U.S.S.R. FY- 90 to 2/15
Total damaged kernels.....	4.0	2.3	2.6	1.8
Foreign material.....	1.0	0.4	0.4	0.3
Shrunken and broken.....	5.0	1.5	1.8	1.5
Total defects.....	5.0	4.2	4.7	3.7
Dockage.....	(¹)	0.8	0.8	0.8

¹ Nongrade.

SOFT RED WINTER WHEAT—AVERAGE FACTOR RESULTS FOR FY 1988, 1989, AND 1990

Factor	U.S. No. 2 grade limit	U.S.S.R. FY-88	U.S.S.R. FY-89	U.S.S.R. FY- 90 to 2/15
Total damaged kernels.....	4.0	(¹)	1.5	(¹)
Foreign material.....	1.0	(¹)	0.2	(¹)
Shrunken and broken.....	5.0	(¹)	0.8	(¹)
Total defects.....	5.0	(¹)	2.5	(¹)
Dockage.....	(²)	(¹)	0.6	(¹)

¹ None.

² Nongrade.

CORN EXPORTS—AVERAGE FACTOR RESULTS FOR FY 1988, 1989, AND 1990

Factor	U.S. No. 2 grade limit	U.S.S.R. FY-88	U.S.S.R. FY-89	U.S.S.R. FY- 90 to 2/15
Test weight:				
Lb/bushel.....	52.0	57.0	57.0	57.0
Kg/hectoliter ¹	66.9	73.4	73.4	73.4
Moisture.....	(²)	13.8	13.7	14.6
Heat damage.....	0.5	0.0	0.0	0.0
Total damaged kernels.....	7.0	5.0	5.3	2.9
Broken corn and foreign material.....	4.0	3.8	3.8	3.5

¹ FGIS does not express kg/hectoliter as a grade limit.

² Nongrade.

As a further point of reference, we offer the following information on export tonnage to the Soviet Union.

HARD RED WINTER WHEAT (HRW)

Year	Metric tons	Percent of total U.S. HRW exports
FY 1988.....	7,729,152	35.6
FY 1989.....	4,059,120	26.8
FY 1990-2/15/90.....	497,390	17.0

NOTE: One lot representing 2,701 metric tons was graded U.S. No. 3 during FY 1988 and all others graded U.S. No. 2 or U.S. No. 2 or better.

HARD RED SPRING WHEAT (HRS)

Year	Metric tons	Percent of total U.S. HRW exports
FY 1988.....	1,200,157	18.1
FY 1989.....	536,171	9.3
FY 1990-2/15/90.....	380,279	14.4

NOTE: One lot representing 1,382 metric tons was graded U.S. No. 1 and all others graded U.S. No. 2 or U.S. No. 2 or better.

SOFT RED WINTER WHEAT (SRW)

Year	Metric tons	Percent of total U.S. SRW exports
FY 1988.....	(¹)	(¹)
FY 1989.....	801,638	6.9
FY 1990-2/15/90.....	(¹)	(¹)

¹ None.

NOTE: All of the SRW wheat shipments to the U.S.S.R. were graded U.S. No. 2 or U.S. No. 2 or better.

CORN EXPORTS TO THE U.S.S.R.

Year	Metric tons	Percent of total U.S. corn exports
FY 1988.....	5,526,917	12.4
FY 1989.....	16,327,421	31.9

CORN EXPORTS TO THE U.S.S.R.—Continued

Year	Metric tons	Percent of total U.S. corn exports
FY 1990-2/15/90	9,806,661	36.1

NOTE: All of the corn shipments to the U.S.S.R. were graded U.S. No. 3 or U.S. No. 3 or better.

RESPONSES TO SENATOR LUGAR

U.S. SHARE OF JAPANESE SOYBEAN MARKET

3. At the February 22 hearing, a witness stated that "the U.S.A. has lost about 20 percent share of the Japanese [soybeans] market (about 30 million bushels out of a 150 million bushels market) in the past 4 years, mainly because of quality."

Question (a). Does the Department agree that the most important cause of U.S. market share losses is perceived quality problems?

Answer Mrs. Smith. Japanese soybean imports are shown below:

	[1,000 metric tons]		
	Total	From U.S.	U.S. share percent
1985/86	4,796	4,290	89
1988/89	4,228	3,231	75

The U.S. market share of Japanese soybean imports declined from 89 percent in 1985/86 to 75 percent in 1988/89 (see the above table). The 1988 U.S. drought resulted in lower soybean production and higher prices. Coinciding with the drought was a shift by Japan to meal imports rather than raw soybeans because of lower crushing margins. In addition, Japan imported more soybeans from Brazil at our expense because of higher quality (oil and protein content), cleanliness, and lower price of Brazilian soybeans. Thus, we believe that while the quality differences were part of the cause of U.S. market share losses in the Japanese soybean market, economic forces played an even more important role.

Question (b). Did the U.S. farm program's tendency to encourage corn production and discourage soybean production also play a role?

Answer Mrs. Smith. Although soybeans were relatively free from direct Government programs, production levels and, as a result, exports were affected by agricultural programs for other commodities. Price supports, paid land diversion, and set-asides for cotton, sorghum, wheat, and corn, affected soybean acreage because these crops competed with soybeans for the same resources. At the same time, in both Argentina and Brazil, corn production was being scaled back in favor of soybean production. In conclusion, the U.S. farm program tended to reduce soybean production, and, as a result, to raise soybean market prices and hinder U.S. competitiveness in the world soybean market.

Question (c). Did reduced U.S. soybean production and stocks after the 1988 drought also play a role?

Answer Mrs. Smith. Yes.

Question (d). How, in your opinion, did the relative importance of these factors compare to the importance of quality factors?

Answer Mrs. Smith. While quality and cleanliness differences were part of the cause of the U.S. losses in the Japanese soybean market, the reduction in soybean production and stocks and other economic factors were more significant.

PREMIUMS FOR CANADIAN AND AUSTRALIAN WHEAT

4. The statement is often made that Canadian and Australian wheat can command a premium because of higher quality.

Question. However, is it not true that in some competitive markets (for example, the Philippines) the CWB undercuts the comparable U.S. price by several dollars per ton, whereas in markets like Japan where market shares are fairly constant, the CWB charges substantially above the U.S. price?

Answer Mrs. Smith. Grain trade analysts have observed in recent years that Canadian wheat was a few dollars per ton lower than U.S. wheat in competitive markets such as the Philippines. For example, on October 24, 1989, U.S. No. 2 Hard Red Spring wheat was priced at \$176.50 per metric ton to the Philippines while Canadian No. 2 Spring wheat was sold at \$174.95. On January 23, 1990, U.S. sold for \$169.12 per metric ton while Canadian wheat was priced at \$167.20. On March 6, 1990, U.S. wheat was priced at \$159.40 per metric ton while Canadian wheat sold for \$156.90. In the Japanese market, the same Canadian wheat sold under a bilateral agreement for \$40 per metric ton more than U.S. wheat late last summer.

Question. Are there documented studies showing what premium Canadian farmers receive (if any) because of higher quality?

Answer Mrs. Smith. Canadian wheat farmers can receive premiums; for example, when they deliver higher protein wheat. Wheat farmers also receive premiums when they deliver wheat with low dockage because of the practice of deducting the dockage weight from the gross weight prior to pricing wheat sales. A study by Professor William W. Wilson of the North Dakota State University shows that Canadian wheats in the Rotterdam market command a premium of about \$20 per metric ton over U.S. wheats for protein content and certain quality factors. How much of this premium is due to cleanliness of the wheat is uncertain. The premium of Canadian wheats reaches \$18 per metric ton in the Japanese market.

Question. Does this extra income (if any) make up for the cost of cleaning?

Answer Mrs. Smith. The structure of the Canadian grain marketing system provides no incentive to clean at the farm level and essentially all cleaning is done at the port terminal elevators. Higher export prices and premiums earned by the Canadian Wheat Board translate into additional compensation for producers.

PREPARED STATEMENT OF PHILIP L. CHRISTENSON, ASSISTANT ADMINISTRATOR, BUREAU FOR FOOD FOR PEACE AND VOLUNTARY ASSISTANCE, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, WASHINGTON, DC

Good morning, Mr. Chairman. I appreciate being invited to appear before your subcommittee to testify on grain quality issues. I commend you for focusing attention on an area which is too often skimmed over when the question of grain quality is discussed—that is, on our food and commodity assistance programs to developing countries. Although U.S. food aid programs account for only a small percentage of total exports, I believe it is important that we provide a high quality product to the recipients of our food assistance.

Like many who have read articles in the press concerning grain quality in food aid shipments and allegations that high quality grain is deliberately mixed with rocks, dirt, and other foreign matter to bring it to the lowest possible acceptable standard, I had my doubts about food aid suppliers. I had expected, when appointed to this job over a year ago, to find that grain quality issues would be major problems to be faced.

I am happy to report that this has not been the case. What I have decided is that we would be well advised to bring to Public Law 480 a system more closely aligned with the U.S. commercial grain trade. For instance, in commercial transactions, if a shipment upon arrival is within 5 percent of the gross weight listed on the bill of lading, it is considered to be the appropriate amount. I think that many developing countries would be better served in operating under these rules rather than counting down to the last pound of grain or focusing on the amount of dockage in the shipment. My impression is that these countries would get more for their money if commercial procedures were applied to Public Law 480.

Although we do occasionally receive complaints from recipients, they usually result from some circumstance other than poor quality grain. Public Law 480 agreements are often negotiated by the Ministry of Finance in overseas countries. It is sometimes the case that the officials who are party to the commodity transaction are not completely familiar with the food processing industry and enter into agreements that have not been properly vetted by the industry. This can result in delivery of a commodity whose characteristics are not wholly appropriate for its intended end use.

In some cases, our own negotiators in AID Missions overseas have not been sufficiently familiarized with the food industry and do not always call proper attention

to important grain quality issues. We had a case recently in Haiti where it was apparently not completely understood that the agreement we were offering was to provide generic wheat and not a particular protein content. As a result, the initial shipment of Soft Red Winter wheat was already in the country before the Haitian Government's milling plant personnel were aware of having received wheat they felt was inappropriate for their milling and baking needs.

As part of my responsibility for the prudent management of the Public Law 480 program, I have also looked into the question of whether grains should be cleaned prior to shipment as a cost saving measure. It seemed reasonable to be concerned about the costs of shipping nonfood material with the grain. From what I can gather, cleaning grain prior to shipment is not necessarily economically justified. All grain, regardless of its quality, must be cleaned prior to processing as a standard operation to protect the machinery of the mill. No matter how clean the wheat or corn is going onto a ship, the recipient has to clean it to protect his machinery from damage.

The question is, then, whether it is economically worthwhile to clean the grain at other stages of the food chain. From a cost/benefit point of view, it is apparently not worthwhile. Recipient countries for title I programs pay the cost of shipping and handling. In the past year, I have found no country or importer willing to pay a premium for grain to be cleaned prior to shipment. The \$2.21 per ton cost of cleaning export wheat at a terminal elevator exceeds the value of any shipping cost reductions.

I am also here to report to you what I am told by the processing industry. I am told that in the process of moving grain through our export channels, every movement, whether it be between bins or to the terminal elevator or onto the ship, results in some change in the quality characteristics of the grain. Dust is generated; broken kernels result; other damage can occur. What I have come to appreciate is that U.S. grain delivered to processing plants in this country will probably always be "cleaner" and of slightly higher "quality" than U.S. grain after it has undergone repeated handling and movement to an overseas processing plant.

An additional factor that I think needs to be plugged into the clean grain equation is the system under which Public Law 480 commodities are purchased. While the U.S. food and grain industries operate under a system in which personal confidence, trust, and a long term interest in maintaining the relationship between buyer and seller are significant factors, Public Law 480 commodities are purchased under an open tender system in which the lowest bidder wins.

In a commercial transaction, grain quality is important to both buyer and seller. A supplier who provides grain at the lowest possible end of the grade standard is not going to have the same business opportunities as one who provides better quality grain at the high end of the grade. An experienced buyer would certainly not offer the same price to these two sellers. In that vein, we are exploring ways to make food aid programs more closely resemble a commercial transaction.

Although we at AID are not grain quality experts, I think some of our experiences with foreign buyers and recipients can be instructive. They also serve to remind that "problems" of grain quality are not always clear-cut cases of providing an inferior product. One recent example involved the supply of Public Law 480 title II rice to Liberia.

Under the title II agreement, Liberia had requested U.S. No. 5 rice with 60 percent parboiled and 40 percent milled. The rice was to be sold into the marketplace and the resulting proceeds used for development projects. Upon arrival of the rice, Liberia expressed discontent about the variation of color in the shipment. Although the rice did meet U.S. standards for No. 5 with 20 percent broken, the color ranges for milled rice and parboiled rice are not identical. Consequently, some of the parboiled rice was deemed less desirable by local dealers because of its dark color.

The complaints from Liberian rice dealers evidently came about due to a misconception on the part of the Liberians as to the exact specifications for parboiled rice. We are working with USDA in exploring ways to prevent this sort of misunderstanding. To prevent a recurrence of complaints about U.S. parboiled rice, we are considering the option of ordering U.S. No. 2 or No. 3 for title II programs rather than No. 5. This would, of course, increase the procurement price of rice and would result in a smaller amount of commodity provided. Another option would be to discontinue the use of parboiled rice under title II sales programs, particularly if it is determined that this type of rice would ultimately have a negative impact on such programs.

Complaints about grain quality can also come about due to differing testing procedures or standards employed by a recipient country. Public Law 480 title II wheat was shipped to Ethiopia in 1988 to replenish the Food Security Reserve of the Ethio-

pian Relief and Rehabilitation Commission (RRC) from which 9,000 tons had been borrowed by three U.S. PVO's for use in fulfilling emergency program feeding requirements. When the RRC complained that U.S. wheat did not meet Ethiopian standards, a team from USDA was dispatched to analyze and resolve the situation. The team discovered that the apparent lapse in quality standards had come about because the Ethiopians used a screen with larger openings when testing the wheat for dockage and foreign material than is used in U.S. testing. Because of the difference in the screens, the Ethiopians had concluded that the U.S. wheat was of a lower quality than could be accepted. When the disparity in testing methods was discovered, the RRC agreed to accept the wheat which did, in fact, exceed the minimum standards for U.S. No. 2.

An additional issue involving U.S. wheat provided to Ethiopia developed during the summer of 1988. Several shipments of wheat, totaling 20,000 MT, were quarantined by Ethiopian plant protection officials due to the presence of prohibited weed seeds. When the wheat was tested by USDA experts, the weed seeds were found to be common to major wheat producing areas of the world. Wheat harvesting and handling practices employed by major wheat suppliers make it economically impractical to adhere to the Ethiopian standards developed in response to this complaint. Nevertheless, Ethiopian plant protection authorities required that the wheat be cleaned before it could be distributed. To facilitate movement of the grain, it was cleaned in Ethiopia prior to distribution at a cost to AID of \$450,000.

Steps have been taken to avoid this sort of situation with regard to wheat shipments to Ethiopia. However, I think it is indicative of the need for clear communication and a common understanding of commodity specifications between the United States and foreign buyers or recipients of food aid shipments. Through communication and consistency, I think we can minimize the chances of future food aid quality complaints.

We recognize the fact that some of the complaints received by AID about the quality of food aid shipments may sometimes be motivated by factors other than solely grain quality. It may be that U.S. commodities arrive in a country during the harvest or during a period of port congestion when a country would rather not have commodities moving through its storage and marketing pipeline. I think it is important to differentiate between real quality problems and instances in which the root of the complaint is a separate issue.

It should also be noted that U.S. food aid to developing countries is being received under conditions which are somewhat less than optimal. There are instances in which the quality of U.S. commodities deteriorate after arrival in a country due to careless handling or improper storage. Other problems occur when the food is transported from a port to its ultimate beneficiaries under harsh conditions.

These problems aside, Mr. Chairman, the current grain standards system has worked relatively well for food aid programs. Because most title II commodities are processed food products, the vast majority of bulk grains are shipped under title I, which more closely approximates a commercial transaction. Under title I, recipient countries order commodities to certain specifications and generally receive what they request. One would think that dissatisfaction with the grading standards would be reflected in a country's commodity requests, but we have not seen any evidence of a desire to specify higher grades under title I. We think that Public Law 480 title I grains are generally of a quality comparable to normal commercial sales.

When problems or complaints do arise, regardless of the reason, I believe it is imperative that the United States act quickly to resolve the situation. Unfortunately, this has not always been the case, especially with Public Law 480 title II shipments. I understand that USDA has only one full-time "troubleshooter" to travel and investigate export grain quality complaints. This one person is responsible primarily for commercial export shipments and title I. The result has been that it has sometimes taken weeks to arrange for on-the-ground inspection and resolution by a qualified U.S. expert.

One idea that has been discussed in the past and that I think deserves further consideration is the establishment of a Rapid Expert Deployment Team, or RED Team, which can be "on the next plane out" when problems arise. This would not prevent problems, but it certainly could help expedite the process of investigating the problem and working with the buyer or recipient country to resolve a potentially delicate situation.

The fundamental goal of the Agency for International Development is to assist developing countries in their economic development. Ideally, such economic development will eventually lead to a greater ability to purchase needed food under normal commercial terms. In this scenario, it behooves U.S. agriculture and agribusiness in-

terests to provide a high quality product in the hope of carving out a market niche to fill when a country reaches a sound economic footing.

I believe the primary goal of Public Law 480 is to feed hungry people. We are proud of the role the United States has traditionally played in serving as the world's largest and most reliable supplier of food assistance. However, market development for U.S. agricultural products is also a legitimate objective of the program. By providing high quality grains to needy countries, I think we can work toward achieving both of these worthy goals.

[The prepared statements of Michael Ageev, Ivan Shestopalov, and Paul Vervaeke follow:]

TESTIMONY OF MICHAEL AGEEV
 DEPUTY CHAIRMAN OF FTO 'EXPORTKHLEB'
 BEFORE THE
 SENATE SUBCOMMITTEE ON AGRICULTURAL RESEARCH
 AND GENERAL LEGISLATION
 FEBRUARY 8, 1990
 SENATE RUSSELL OFFICE BUILDING, WASHINGTON, D.C.

IN RECENT YEARS THE SOLUTION OF THE PROBLEM OF SUPPLYING THE POPULATION WITH FOODSTUFFS AND CONSUMER GOODS IS ACKNOWLEDGED AS A TASK OF PARAMOUNT IMPORTANCE IN THE USSR. HUGE SUMS IN FREE CURRENCY ARE SPENT FOR THE IMPORTS OF GRAIN. THEREFORE IT IS NATURAL THAT OUR GOVERNMENT AND THE GENERAL PUBLIC PAY SUCH GREAT ATTENTION TO THE QUALITY OF GRAIN THAT WE IMPORT AND IT IS UNDERSTANDABLE WHY SO OFTEN WE ARE CRITICIZED WHEN THE GRAIN WE IMPORT DOES NOT MEET THE REQUIREMENTS OF OUR CUSTOMERS.

ONE OF THE MAIN SUPPLIERS OF GRAIN TO OUR COUNTRY IS THE USA WHOSE SHARE IN SOME YEARS CONSTITUTES UP TO A HALF OR MORE OF OUR IMPORTS OF THIS COMMODITY. THEREFORE WE ARE EXTREMELY INTERESTED IN RECEIVING GRAIN FROM THE UNITED STATES ONLY OF HIGH QUALITY.

ALL THESE YEARS WE WORK IN CLOSE CONTACT WITH THE USDA IN ORDER TO SOLVE THE PROBLEMS RELATING TO THE QUALITY OF GRAIN AND WE ARE GRATEFUL TO THEM FOR THEIR ASSISTANCE AND EFFORTS. IN THE FRAMEWORK OF THE LONG-TERM GRAIN AGREEMENT BETWEEN OUR COUNTRIES WE HOLD TWICE A YEAR CONSULTATIONS WITH THE USDA AT WHICH A FRANK EXCHANGE OF VIEWS IS TAKING PLACE AND THE RESULTS OF THE WORK THAT HAS BEEN CARRIED OUT ARE ANALYSED. THIS CONTRIBUTES TO THE IMPROVEMENT OF THE QUALITY OF GRAIN SHIPPED FROM THE UNITED STATES.

HOWEVER WE MUST INFORM YOU THAT THERE STILL REMAIN SERIOUS COMPLAINTS ABOUT THE QUALITY OF U.S. GRAIN AS FAR AS WE ARE CONCERNED. THE MAIN PROBLEMS ENCOUNTERED BY US ARE CONNECTED WITH THE INSUFFICIENT CLEANLINESS OF AMERICAN GRAIN, LARGE PERCENTAGE OF BROKEN KERNELS. PRESENCE OF QUARANTINE SEEDS IS A VERY SERIOUS PROBLEM WHICH WILL BE DEALT WITH IN DETAIL BY MR. SHESTOPALOV IN HIS TESTIMONY. TILL RECENTLY THE INFESTATION OF AMERICAN GRAIN WAS A MAJOR PROBLEM. THIS PROBLEM HAS NOT YET BEEN ENTIRELY REMOVED FROM THE AGENDA.

ALL FIGURES THAT I SUBSEQUENTLY REFER TO IN MY TESTIMONY ARE BASED ON THE ANALYSIS OF THE DATA PERTAINING TO THE LAST THREE YEARS (FROM 1987 TO 1989).

SHIPMENTS OF U.S. WHEAT TO OUR COUNTRY SHOW A HIGHER CONTENT OF FOREIGN ADMIXTURE COMPARED TO OTHER EXPORTERS, E.G. IN HARD WINTER NO. 2 THE AVERAGE FM CONTENT CONSTITUTES 1,7% WHEREAS, IN CANADIAN WESTERN RED SPRING IT IS 0,7% AND IN AUSTRALIAN STANDARD WHITE 0,5%.

ONE SHOULD NOTE THE FACT THAT U.S. WHEAT IS NOT UNIFORM AS FAR AS THIS CHARACTERISTIC IS CONCERNED. SOME SHIPMENTS HAVE ARRIVED WITH FM CONTENT OF 0,6%, OTHERS WITH 3,7%. CANADIAN AND AUSTRALIAN WHEATS ARE MUCH MORE UNIFORM IN THIS RESPECT. (CANADIAN FROM 0,6% TO 1,0%, AUSTRALIAN FROM 0,4% TO 0,6%.) U.S. WHEAT IS ALSO NOTED FOR HIGH CONTENT OF ORGANIC ADMIXTURE. AMERICAN WHEAT IS ALSO NOT UNIFORM AS FAR AS THE SIZE OF KERNELS IS CONCERNED. THE CONTENT OF SMALL KERNELS PASSING THROUGH THE SIEVE 1,7 BY 20 MM RANGES FROM 1 TO 6%. THIS COMPLICATES ITS USE AND LOWERS THE EXTRACTION OF FLOUR. ALL THAT HAS BEEN SAID ABOUT HARD WINTER WHEAT IS ALSO ATTRIBUTABLE TO DARK NORTHERN SPRING.

NOW WE COME TO THE QUALITY OF U.S. CORN. THE EXPERIENCE OF MANY YEARS DURING WHICH U.S. YELLOW CORN NO. 3 HAS BEEN IMPORTED BY OUR COUNTRY SHOWS THAT THIS COMMODITY HAS NOT BEEN UNIFORM IN QUALITY.

THE CONTENT OF FOREIGN ADMIXTURE ON THE AVERAGE WAS EQUAL TO 3,5% IN U.S. CORN AND ONLY 0,9% IN CHINESE. IN U.S. CORN THE FLUCTUATION WAS FROM 0,7 TO 10,6%, WHILE IN THE CHINESE FROM 0,8 TO 2,2%.

THE GREATEST CONCERN TO OUR CUSTOMERS CAUSES THE CONTENT OF BROKEN KERNELS IN U.S. CORN WHICH ON THE AVERAGE AMOUNTED TO 9,5% COMPARED TO 5,6% IN CHINESE CORN. THE CONTENT OF BROKEN KERNELS IN U.S. CORN FLUCTUATED FROM 1 TO 33%.

WE HAVE TO NOTE THAT THE HIGH CONTENT OF BROKEN KERNELS LEADS TO LOSSES OF GRAIN DURING UNLOADING AND TRANSPORTATION, CREATES DIFFICULTIES IN THE UTILIZATION OF CORN, REDUCES THE OUTPUT OF THE PRODUCT. IT ALSO CONTRIBUTES TO DETERIORATION IN SANITARY-HIGIENIC CONDITION OF CORN.

OUR CUSTOMERS WERE OFTEN DISSATISFIED WITH THE QUALITY OF U.S. SORGHUM. CHARACTERISTIC OF THIS COMMODITY WAS THE HIGH CONTENT OF FOREIGN ADMIXTURE WHICH AMOUNTED TO 3,9% COMPARED TO ONLY 1% IN ARGENTINE SORGHUM AND 0,9% IN AUSTRALIAN SORGHUM. AGAIN WE HAVE TO NOTE THE ABSENCE OF UNIFORMITY IN U.S. SORGHUM. SOME SHIPMENTS CONTAINED 2%, OTHERS 7% OF FOREIGN MATTER. ONE MUST ALSO NOTE THE HIGH CONTENT OF BROKEN KERNELS IN U.S. SORGHUM - 9,8% COMPARED TO 5,3% IN ARGENTINE AND 4,8% IN AUSTRALIAN SORGHUM. THE CONTENT OF BROKEN KERNELS IN U.S. SORGHUM RANGED FROM 4 TO 14%.

THE ANALYSIS OF THE QUALITY OF SOYABEAN MEAL SHOWS ITS STABILITY AND UNIFORMITY. HOWEVER SOME SHIPMENTS WERE CHARACTERIZED BY HIGH MOISTURE CONTENT ALTHOUGH THE TOTAL QUANTITY OF SUCH SOYABEAN MEAL WAS INSIGNIFICANT.

THE QUALITY OF SOYABEAN ON THE WHOLE MET THE REQUIREMENTS OF OUR CUSTOMERS ALTHOUGH SOME SHIPMENTS WERE CHARACTERIZED BY HIGH CONTENT OF SPLITS (UP TO 20%) AND LOWER CONTENT (COMPARED TO BRAZILIAN MEAL) OF PROTEIN AND FAT.

A BIG PROBLEM IN THE PAST YEARS AS FAR AS U.S. GRAIN IS CONCERNED USED TO BE INFESTATION. THE LEVEL OF INFESTATION FLUCTUATED FROM YEAR TO YEAR HOWEVER ON THE AVERAGE 10% OF U.S. GRAIN ARRIVED IN OUR PORTS INFESTED WITH WEEVILS.

AFTER THE INTRODUCTION IN 1985 OF FUMIGATION OF GRAIN WITH PHOSPHINES DURING TRANSPORTATION FROM U.S. TO SOVIET PORTS AND ESPECIALLY SINCE RECIRCULATION METHOD HAS BEEN ADOPTED IN 1987 THE SITUATION WITH INFESTATION HAS NOTABLY IMPROVED. IN 1988 THE SHARE OF U.S. GRAIN WHICH ARRIVED IN OUR PORTS INFESTED FELL TO 0,5% AND IN 1989 -TO 0,3%.

HOWEVER, IT IS NECESSARY TO TAKE INTO CONSIDERATION THE FACT THAT THIS WAS THE RESULT OF 100% PREVENTIVE TREATMENT OF GRAIN WITH PHOSPHINES DURING SEA TRANSPORTATION. IN OUR COUNTRY THERE HAVE ALREADY BEEN PROTESTS ON BEHALF OF SEAMEN TRADE UNIONS, LONGSHOREMEN, GRAIN INSPECTION OFFICIALS WHO REFERRED TO THE HAZARDS FOR THEIR HEALTH OF THIS MEANS OF GRAIN FUMIGATION AND EVEN THE THREAT OF BOYCOTT OF SUCH SHIPMENTS. THE FAR EASTERN SHIPPING COMPANY WHICH CARRIES OUT MARINE TRANSPORTATION TO OUR COUNTRY FROM THE U.S. PACIFIC COAST ISSUED ON THE 25 JANUARY A PROHIBITION OF PHOSPHINE FUMIGATION IN THE VESSELS BELONGING TO IT. THEREFORE WE COUNT ON THE AMERICAN SIDE TO WORK ON THE MEASURES WHICH WILL ENSURE THE ARRIVAL OF GRAIN TO OUR PORTS FREE OF INFESTATION WITHOUT HAVING TO FUMIGATE THE GRAIN EN ROUTE.

AS AN EXAMPLE, AUSTRALIA, A COUNTRY WITH HOT CLIMATE, ORGANISED THE SHIPMENTS FOR EXPORT IN SUCH A WAY THAT INFESTATION OF GRAIN IS NON-EXISTENT AND THERE IS NO NEED TO FUMIGATE IT EN ROUTE. IT GOES WITHOUT SAYING THAT THE PROBLEM OF INFESTATION OF GRAIN DOES NOT EXIST IN CANADA OR EUROPE.

IN OUR OPINION THE FOLLOWING MEASURES WOULD CONTRIBUTE TO THE SOLUTION OF THE ABOVE PROBLEMS:

1. BETTER CLEANING OF GRAIN AT THE TIME IT IS RECEIVED FROM THE FARMERS IN COUNTRY ELEVATORS AND ALSO ADDITIONAL CLEANING, IF NECESSARY, IN TERMINAL ELEVATORS.

2. THE CARRYING OUT OF MULTI-STAGE DRYING OF CORN WHICH WOULD ENSURE THAT THE BREAKAGE AT LOADING AND UNLOADING IS AVOIDED.

3. CARRYING OUT OF FUMIGATION OF GRAIN ALL THROUGH THE PERIOD IT IS STORED.

4. CARRYING OUT OF MEASURES TO SOLVE THE PROBLEM OF QUARANTINE SEEDS.

IT IS VERY IMPORTANT THAT THE ABOVE PROBLEMS SHOULD BE SOLVED BY THE AMERICAN SIDE. THE PROBLEM OF IMPORTS OF GRAIN IS VERY SENSITIVE IN OUR COUNTRY. THERE IS GROWING DISCONTENT IN THE USSR ABOUT THE HIGH VOLUME OF OUR IMPORTS OF GRAIN. THIS QUESTION ATTRACTS GREAT ATTENTION IN OUR PRESS. IT IS DEBATED IN OUR PARLIAMENT. THE REFLECTION OF THESE SENTIMENTS IS THE EXPERIMENT, WHICH IS BEING CARRIED OUT IN OUR COUNTRY SINCE FALL OF LAST YEAR, ON PURCHASES OF GRAIN, PULSES AND OILSEEDS FROM OUR AGRICULTURAL ENTERPRISES FOR FREE CURRENCY WITH THE AIM OF ENSURING GREATER SELF-SUFFICIENCY IN THESE PRODUCTS.

IN THESE CONDITIONS IT IS ESPECIALLY IMPORTANT THAT THE IMPORTED GRAIN IS DELIVERED ONLY OF EXCELLENT QUALITY AND THE COUNTRIES WHICH CAN ENSURE SUCH QUALITY WILL HAVE AN ADVANTAGE. WE EXPECT THAT IN THE NEAREST YEARS OUR IMPORTS OF GRAIN WILL BEGIN TO DECLINE AND IF THERE IS NO IMPROVEMENT IN THE QUALITY OF U.S. GRAIN THIS REDUCTION WILL BE TO A GREAT EXTENT AT THE EXPENSE OF U.S. GRAIN AS WE SHALL BE COMPELLED TO SEEK EVERY OPPORTUNITY TO SWITCH OUR PURCHASES TO OTHER COUNTRIES.

IN CONCLUSION I WOULD LIKE TO THANK THE SENATE SUBCOMMITTEE FOR THE FACT THAT IT HAS CONSIDERED POSSIBLE TO INVITE US TO TAKE PART IN THIS HEARING. THIS IS A GREAT HONOUR FOR US. THE PROPOSED GRAIN QUALITY INCENTIVE ACT, IF ADOPTED AND CARRIED OUT, SHOULD IN OUR OPINION SOLVE MANY OF THE PROBLEMS MENTIONED BY US. WE ARE CONFIDENT THAT IF SUCH A HIGH BODY IS TAKING UP THE PROBLEM OF QUALITY OF U.S. GRAIN THE POSITIVE EFFECT IS ASSURED.

THANK YOU.

TESTIMONY OF IVAN SHESTOPALOV
CHIEF OF THE STATE INSPECTION AND PLANT QUARANTINE
SERVICE, U.S.S.R. STATE COMMITTEE ON FOOD PROCUREMENT
BEFORE THE
SENATE SUBCOMMITTEE ON AGRICULTURAL RESEARCH
AND GENERAL LEGISLATION

FEBRUARY 8, 1990
SENATE RUSSELL OFFICE BUILDING, WASHINGTON, D.C.

PLANT QUARANTINE PROBLEMS IN CONNECTION WITH SHIPMENT OF U.S. GRAIN (WHEAT, CORN, SOYABEAN) TO THE USSR EXISTED FOR MORE THAN 20 YEARS, EVER SINCE THE VERY FIRST SHIPMENTS OF GRAIN TOOK PLACE. IN THE COURSE OF MANY YEARS THE APPROPRIATE STATE SERVICES OF BOTH COUNTRIES, AS WELL AS THE SUPPLYING GRAIN COMPANIES, MADE EVERY EFFORT TO SOLVE THESE PROBLEMS.

PARTICULARLY, THEY TRIED TO ELIMINATE THE DIFFERENCES EXISTING IN THE STATE STANDARDS ON GRAIN CURRENTLY IN FORCE IN THE USA AND USSR, FOR THE PURPOSE OF STANDARDS' UNIFICATION AS TO THE MAIN GRAIN CHARACTERISTICS AND BRINGING CLOSER THE REQUIREMENTS ISSUED BY THE IMPORTER AND THE EXPORTER AS WELL. THERE WAS CARRIED OUT A SERIES OF JOINT EXPERIMENTS ON DISINFESTATION OF GRAIN ON BOARD OF THE SHIP EN ROUTE, AIMING AT THE SELECTION OF THE MOST EFFECTIVE FUMIGANTS AND IMPROVING OF THE FUMIGATION TECHNOLOGY SAFE FOR THE CREW. SCIENTIFIC RESEARCH WAS UNDERTAKEN FOR THE DEVELOPMENT OF EQUIPMENT FOR EARLIER DETECTION OF HIDDEN INFESTATION OF GRAIN BEFORE LOADING IN THE USA SEAPORTS, TO PREVENT THE ENTRY OF THE INFESTED GRAIN INTO THE SOVIET PORTS, BECAUSE DURING THE SHIPMENT OF GRAIN FROM THE USA TO THE USSR THE HIDDEN INFESTATION SHOWS UP AND WHILE NOT BEING DETECTED BY THE INSPECTING PERSONNEL OF THE FEDERAL GRAIN INSPECTION SERVICE (FGIS) AT LOADING, IT IS LATER DETECTED BY THE SOVIET INSPECTORS AT UNLOADING. THE INFESTED GRAIN HAD TO BE EXPOSED TO FUMIGATION IN THE SOVIET PORTS OF ENTRY, WHICH RESULTED IN THE DEMURRAGE OF SHIPS AND UNJUSTIFIED EXPENDITURES.

AS A RESULT OF JOINT EFFORTS THE AMERICAN AND THE SOVIET SIDES MANAGED TO SOLVE THE PROBLEM OF GRAIN INFESTATION DEVELOPING THE NEW TECHNOLOGY OF GRAIN FUMIGATION CARRIED OUT ON BOARD OF THE SHIP EN ROUTE, APPLYING CHEMICAL COMPOUNDS RELEASING GAS PHOSPHINE. ALTHOUGH THE NEW TECHNOLOGY STILL HAS A DEFINITE SAFETY PROBLEM IT NOW WORKS AND HAS BEEN USED IN GRAIN SHIPMENT PRACTICE FOR SEVERAL YEARS.

HOWEVER ONE MORE IMPORTANT QUARANTINE PROBLEM IN CONNECTION WITH SHIPMENTS OF U.S. GRAIN TO THE SOVIET UNION REMAINS UNSOLVED SO FAR. IT CONCERNS THE CONTAMINATION OF GRAIN WITH SEEDS OF QUARANTINE WEEDS, WHICH RESULTS IN THEIR SPREAD ALL OVER THE

TERRITORY OF OUR COUNTRY, WHICH MAY BE THE SOURCE OF THE INFESTATION OF THE AGRICULTURAL LANDS.

ACCORDING TO THE DATA RECEIVED FROM THE STATE SERVICE AND THE ALL-UNION RESEARCH PLANT QUARANTINE INSTITUTE, 95,6% OUT OF THE TOTAL AMOUNT OF THE USA GRAIN DELIVERED INTO THE USSR IN 1989 APPEARED TO BE CONTAMINATED WITH QUARANTINE WEED SEEDS NOT REGISTERED ON THE USSR TERRITORY; IN 1988 CONTAMINATION WAS EQUAL TO 77%, IN 1987 - 88%, IN 1986 - 100%, IN 1985 - 95,6% ETC.

JUDGING BY THE RESULTS OF RANDOM TESTING OF THE US WHEAT IN THE SEAPORTS OF ODESSA, TALLINN AND NAKHODKA DURING 1980-1987, THERE WERE FOUND 78 SPECIES OF WEED SEEDS, INCLUDING 23 SPECIES BEING FOUND REGULARLY AND 20 SPECIES WHICH EARLIER WERE ABSENT ON THE USSR TERRITORY. IN CORN THERE WERE FOUND UP TO 30 SPECIES OF WEED SEEDS, 14 SPECIES OUT OF THESE 30 SPECIES BEING FOUND REGULARLY. IN SOYABEAN THERE WERE FOUND 66 SPECIES OF WEEDS, AMONG WHICH 12 SPECIES WERE BEING FOUND REGULARLY.

THUS, WITHIN THE MENTIONED PERIOD IN THE USA GRAIN THERE WERE FOUND ABOUT 100 SPECIES OF WEED SEEDS, MOST OF WHICH WERE CONSIDERED ABSENT ON THE USSR TERRITORY. WHEAT AND SOYABEAN WERE CONTAMINATED MORE THAN OTHER GRAINS. ONE SHOULD NOTE THAT ALL THE ABOVE MENTIONED GRAIN WAS CERTIFIED BY THE AMERICAN SIDE AS ABSOLUTELY FREE OF QUARANTINE WEEDS.

DIFFERENCES EXISTING IN EVALUATION OF QUARANTINE CONDITIONS OF GRAIN BY THE SOVIET AND AMERICAN INSPECTION SERVICES CONTINUE, SINCE THE FIRST SHIPMENTS OF U.S. GRAIN INTO THE USSR TOOK PLACE. IT CAN BE EXPLAINED BY DIFFERENT APPROACHES, DIFFERENT METHODS OF GRAIN TESTING AND BY DIFFERENT INTERESTS PURSUED BY EACH SIDE. THE SOVIET SIDE IN ACCORDANCE WITH THE CONTRACTS CONCLUDED ON GRAIN SHIPMENTS, REQUIRES ABSOLUTE ABSENCE OF SEEDS OF QUARANTINE WEEDS IN GRAIN, I.E. ZERO TOLERANCE. THE AMERICAN SIDE EXPORTING DIFFERENT CATEGORIES OF GRAIN TO THE USSR (WINTER WHEAT NO. 2, AMERICAN YELLOW CORN NO. 3 AND SOYABEAN) CANNOT GUARANTEE ABSOLUTE ABSENCE OF QUARANTINE WEEDS, BUT IN ORDER TO PROVIDE CERTIFICATION OF GRAIN CONSIGNMENTS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS, ISSUES THE PHYTOSANITARY CERTIFICATES, SAYING THAT THE GRAIN IS COMPLETELY FREE OF ALL SPECIES OF PESTS AND WEEDS SPECIFIED IN THE CONTRACT. OTHERWISE IT IS IMPOSSIBLE TO ISSUE THE CERTIFICATE, AS IT IS PROHIBITED BY THE US LEGISLATION.

THE SYSTEM OF GRAIN INSPECTION EXISTING NOWADAYS IN THE USA ALLOWS THIS KIND OF CERTIFICATION OF GRAIN GOING FOR EXPORT. FOR THIS REASON THE ANIMAL AND PLANT HEALTH INSPECTION SERVICE, WHICH IS THE ONLY COMPETENT STATE SERVICE AUTHORIZED BY THE UNITED STATES

DEPARTMENT OF AGRICULTURE TO CERTIFY THE GRAIN IN PHYTOSANITARY RESPECT, DOES NOT PARTICIPATE IN THE PROCESS AND THERE ARE NO SPECIALISTS ON WEEDS IN THE PORTS OF LOADING WHO COULD HAVE PROVIDED A QUALIFIED CONCLUSION IN EACH CASE OF GRAIN SHIPMENT. THIS KIND OF CONCLUSION MAY BE ISSUED BY THE SEED TESTING LABORATORIES, WHICH ARE UNFORTUNATELY VERY FEW IN THE USA AND WHICH ARE SITUATED A LONG WAY OFF THE SEAPORTS.

THE SOLUTION OF THE PROBLEM OF THE CONTAMINATION OF THE AMERICAN GRAIN EXPORTED TO THE USSR WITH QUARANTINE WEEDS ALONG WITH THE OTHER PROBLEMS ON QUARANTINE CONDITIONS OF GRAIN TO OUR OPINION MIGHT BE ACHIEVED BY UNIFICATION OF THE INSPECTION AND CERTIFYING SYSTEMS OF THE TWO COUNTRIES AND AS A RESULT OF IT SIGNING AN AGREEMENT ON PLANT PROTECTION AND QUARANTINE BETWEEN THE AUTHORIZED SERVICES OF THE USA AND USSR, ALLOWING THE EXPORTER TO PROMPTLY REGULATE ALL QUARANTINE PROBLEMS AND CERTIFY THE REAL QUARANTINE CONDITIONS OF THE EXPORTED GRAIN AS WELL AS ALLOWING THE IMPORTER TO GIVE MORE TRUST TO U.S. PHYTOSANITARY CERTIFICATES AND BE MORE CONFIDENT NOT TO CONTAMINATE OUR LAND WITH THE HARMFUL OBJECTS.

WE HAVE GOOD EXPERIENCE OF SOLVING THE QUARANTINE PROBLEMS IN GRAIN SHIPMENT PRACTICE ALONG THESE LINES WITH MANY COUNTRIES, INCLUDING CANADA, FRANCE, CHINA AND OTHERS. IT IS IN OUR MUTUAL INTEREST TO USE THAT EXPERIENCE IN A PROPER WAY IN ORDER NOT TO JEOPARDIZE LONG -LASTING COOPERATION BETWEEN THE INSPECTION SERVICES OF OUR TWO COUNTRIES AIMING TO IMPROVE THE QUALITY OF GRAIN AND NOT TO BLOCK THE GRAIN EXPORT DUE TO QUARANTINE REASONS.

THANK YOU.

FEDIOL

SOY WORKING GROUP

Branche Foreningen for Olefabrikker i EF
Vereinigung der Ölmühlenindustrie der EWG
E E C Seed Crushers' and Oil Processors' Federation
Federación de la Industria Aceitera de la C E E

Fédération de l'Industrie de l'Huile de la CEE
Federazione dell'Industria Olearia della CEE
Federatie van de Olie-industrie in de EEG
Federação da Indústria de Óleos Vegetais da CEE

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February 2, 1990

Statement concerning the quality of US soybeans

Hearing of the Senate Subcommittee on Agricultural Research and General Legislation on February 8, 1990

Mr. Chairman and Members of the Subcommittee:

I thank you for the opportunity you have given also to your foreign customers to testify today on the subject of grain quality.

My association, FEDIOL, represents the European oilseed processing industry and our members crush about 12 mio tons (326 mio bushels) of soybeans on a yearly basis.

We import half of this quantity from the US and the other half from Brazil and Argentina.

Hence, you will understand that our industry is in a good position to judge on quality differences between various origins of soybeans and we welcome you to share our experience.

Perhaps I better start by explaining to you how our crushers deal with soybeans and what is our quality approach.

- Our industry imports soybeans to crush and to produce soybean oil and soybean meal.

The level of activity and the use of our capacity depends on the realisation of a fair gross crushing margin. As you know, the gross crushing margin is the difference between the revenue on the sales of endproducts which we can obtain from one bu of soybeans, compared to the price of one bu of soybeans.

This calculation not only depends on the relative value of the 3 items of the soyacomplex (soybeans, soybean oil, soybean meal). It depends also on the yield of soybean oil and the yield of soybean meal we get out of 1 bu of soybeans. Normally, there is a premium in the price structure of the soybean oil, compared to soybean meal. So, we prefer to purchase soybeans with a high oil-content.

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In the second place, the total product yield we can obtain out of 1 bu of soybeans, also has a great influence on the margin. It is obvious that a higher moisture content in soybeans has an adverse effect on the total product yield, viz. on the total product value, since this means an extra loss of moisture during the crushing operation.

In the third place, we try to avoid as much as possible to be forced to pay quality penalties to our customers. Our customers in Europe are quality conscious, so we have to guarantee our soybean oil customers a maximum level of ffa and our meal customers a maximum level of moisture and fiber content and especially a minimum level of protein content.

We must give these guarantees, not because we love our customers so much, but because they can buy the same products elsewhere in the world, where quality specifications are easily met at a very reasonable price.

I made this survey of the business approach of the European crushers, so that you can better understand that every quality review should fit in the global calculation of the gross crushing margin on one hand and should take into account the quality alternatives of our international competitors in soy products on the other hand.

Now I should like to go more into details about the quality of US soybeans and the way it affects the gross crushing margin:

1. OIL CONTENT

As I mentioned before, most of the time there is a premium in the price structure of soybean oil, compared to soybean meal. Hence, our interest to buy soybeans with a high oil content. Fortunately, the FGIS now offers a soybean oil testing. The oil content of US soybeans ranges from 18 % to 19 % this year (basis 13 % moisture). It is clear that there is quite a financial consequence for the crusher when crushing soybeans with 18 % oil content or with 19 % oil content, knowing that he has paid the same price for these beans.

2. FREE FATTY ACIDS OF THE SOYBEAN OIL

We guarantee our customers a free fatty acid (ffa) content of 0.75 %. Above this level, they claim an allowance because their refining losses become too high. The high ffa content also influences the shelf-life of the bottled oil.

A high ffa content is often the result of a combination of high moisture content and damaged soybeans.

Therefore, it is essential to receive soybeans with a limited ffa content.

A guarantee of 0.50 % ffa would allow us to work within the limits.

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3. PROTEIN CONTENT

The next quality factor, that plays an important part in our appraisal of soybean-origin, is the protein content. Like in the US, Europe faces a growing demand for poultry. This means higher protein and lower fiber requirements in the animal feed. Hence a demand for high protein soybean meal. We cannot influence the protein content during our processing operations.

The protein content of US soybeans ranges from 49.85 % to 52.75 % this harvest season (on a dry basis). I insist that any comparison between different origins should be made on a dry basis. If you compare the protein content on a basis "as such", please do not forget that you have to redistribute the protein over the dry material (oil and moisture eliminated). So the beans, containing a larger dry material portion, will finally produce meal with a lower protein content.

Our industry faces hard times ~~To~~ meet the quality requirements of our customers in the animal feed industry when using beans from the US. We guarantee a 49 % protein and fat content and we need soybeans with at least 53.40 % protein (dry basis) to reach our specifications.

Here also, there is no guarantee for a minimum protein content. We appreciate that the FGIS service offers us a soybean protein testing. However in order to tackle the real problem, we think there should be an incentive for farmers to produce soybeans with high protein content and a penalty for those who fail to do so.

At this point I want to make an intermediate remark. We have now been discussing the three major quality items for soybeans. In order to strengthen the export position of the US producers, compared to the other exporting nations, we believe it is of utmost importance to reduce the quality gap in oil and protein contents.

There are soybeans available on the world market that meet the required quality specifications and for which we pay a normal market price. More important is that international competition operates with these same beans and offers our customers in Europe the products (especially soybean meal) at reduced price levels. So there is good quality available at low prices in Europe. This makes competition for us on the basis of low quality US soybeans untenable.

These were the three main parameters underlying our judgement of the quality of soybeans.

Let us continue to examine the other parameters and try to find if there is any relation with the first ones:

1. FOREIGN MATERIAL CONTENT

The official grain grading system offers us the possibility to buy on a maximum of 1 %, 2 % or 3 % content. The quality certificate issued by FGIS seldom reflects the real quality at arrival. This seems to be a problem of sampling procedures.

It was very amazing and contradictory for us to see that farm organisations and public authorities tried to increase the quality of their soybeans, whereas grain merchants made large investments to do the opposite and have installed export shipping bins and other equipment to arrange for a maximum limit of FM.

We are not in shortage of FM in Europe and it is a pity to transport such quantities of waste across the ocean.

We also ask for the removal of all cockleburrs which are listed as a toxic substance in Europe.

Lately we have discovered that some new procedures seem to be used to add large quantities of grain dust and foreign material, more precisely, we are talking of fast going transport belts and small sample openings which obviously guarantee little dust and no big straws etc. in the sample (here again we refer to the problem of sampling procedures).

We do not always know the nature of this added material but it hinders our cleaning- and storage capacity and is finally detrimental to the quality of the endproduct.

But far more important is the fact that every one percent of added foreign material reduces the oil content with 0.20 % and the protein content with 0.40 %. So this definitely proves the relation between FM and the oil/protein content.

2. DAMAGE

As far as damage is concerned, we are glad to inform you that there are no problems for this crop year.

However, we believe that the damage factors and tolerances in the US-standards are too generous for export shipments. We often have noticed that soybeans with a higher damage level cannot endure an ocean-transport. The damaged beans degenerate the quality of the whole cargo during the voyage and finally the overseas customer receives off-grade soybeans.

It goes without saying that some kinds of damage combined with a high moisture content, are extremely harmful to the quality of the soybeans.

It is far more logical to crush the damaged beans without delay on the spot in order to limit the losses.

It is intolerable to see that damaged beans are often commingled with sound beans, and destined for ocean transport.

We propose that the total damage should remain unchanged and limited to 3 %, but that there should be a maximum of 1 % for each separate type of damage (except heat damage at 0.5 %).

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3. MOISTURE CONTENT

We have already mentioned this topic when discussing ffa and damaged beans.

A high moisture content accelerates the degeneration process of damaged beans and increases the ffa content in the oil, even of sound beans. This process is stimulated in the ships holds during ocean voyage, especially when there are concentrations of high-moisture soybeans within a shiplot of average-moisture material.

A moisture guarantee of max 14 % is high. We urge you to see to it that no soybeans with a higher moisture content than 14 % should be used to be mixed with others, but that these high moisture beans should be conditioned in a proper way.

4. FGIS

We appreciate the existence of FGIS and its certifying procedures for export. However, we want to raise the question whether quality certifying is appropriate without mandatory testing of the intrinsic qualities representing the real value of the beans. Moreover, although FGIS has proved to be willing to contribute to quality amendments, its standard changing procedures often take a long time and are the results of compromises, not taking into account essential interests of the overseas buyers. Therefore, Mr. Chairman, we appreciate your initiative to increase quality by legislative procedures.

As I told you at the beginning, we compare the quality of US soybeans to the quality of other origins. From the experience in the past it must be clear that the short term approach of optimisation of profits must be replaced by a long term approach of customer satisfaction. We know that the American farmer grows high quality soybeans which can easily stand the international competition. We ask you to create the legal framework so that your overseas customers can purchase from you soybeans with the quality requirements they are looking for at the international market price level.

This will enable us to deliver quality products to our customers, will open a bigger market share for US soybeans in Europe as it will put us in a position to compete more efficiently with the products of other origins.

Thank you, Mr. Chairman, for having given me the opportunity to outline our concern.

Paul Vervaeke

Chairman of the FEDIOL Soy Working Group

PREPARED STATEMENT OF GARY RIEDEL, VICE PRESIDENT, AMERICAN SOYBEAN ASSOCIATION, AND CHAIRMAN, INTERNATIONAL MARKETING COMMITTEE, CENTRALIA, MO

My name is Gary Riedel, a farmer from Centralia, Missouri where I raise soybeans and corn. I am here today in my capacity as vice president of the American Soybean Association, a not-for-profit, farmer controlled, single commodity association representing farmers in 29 States. I appreciate the opportunity to offer comments on Senate Bill S. 1977 whose chief aim is to improve the competitive position of United States grain in world markets in the area of quality.

Quality is an issue of more than passing interest to U.S. soybean growers. ASA has identified two principal quality factors that damage U.S. soybean competitiveness internationally and result in less than desired quality for domestic use. These factors are foreign material and composition.

Many of the features of Senate Bill S. 1977 are designed or can be adapted to address these key concerns for soybean quality. I will attempt to demonstrate, using independent data, the extent of the problem and some of its effects on market share. I will review the provisions of Senate Bill S. 1977 applicable to soybeans that we can support and offer alternative and possibly less contentious means of accomplishing the goals of the legislation, where appropriate. I will close by presenting other pertinent information and recommendations.

I. THE QUALITY PROBLEM OF U.S. SOYBEANS AND CAN IT BE QUANTIFIED?

There is indeed sufficient evidence to indicate that U.S. soybeans are not quality competitive with major export competition. Exhibit 1 charts the differences in composition and foreign material content of soybeans at the point of discharge among the major exporting countries. This information represents data collected by the Japan Oilseed Processors Association and Tagol, a large Portuguese importer and crusher, supplemented by corroborating data collected by the Agricultural Research Service, USDA. The USDA data covers three U.S. crop-years and two South American harvests. The data from the three sources did not always agree as to the actual values but were in good agreement in the relative values among the represented countries. The data shows quite clearly the quality advantages of Brazilian soybeans.

First, regarding composition, none of the three countries, United States, Brazil and Argentina, showed a significant advantage in protein content, but the oil content of the Brazilian crop averaged about 1.3 percent higher than the United States. The advantage is equivalent to about 0.78 pounds more oil per bushel or about \$.156 per bushel additional value. In addition, since more dry matter is removed as oil, the resulting protein concentration in the defatted soybean meal is higher than in meal produced from U.S. soybeans.

A second reason U.S. soybeans are not quality competitive is their lack of relative cleanliness. U.S. soybeans typically sell on the basis of U.S. No. 2 Yellow soybeans, which allows maximum 2 percent foreign material (FM). South American origins guarantee maximum 1 percent FM at time of loading. After vessel loading operations and vessel discharge at destination the FM values climb to even higher levels, due principally to breakage. The result is that U.S. soybeans contain about 1 percent more foreign material than South American origins. This translates into an economic advantage of at least \$.06 per bushel for Brazilian soybeans, not including the freight costs for carrying the foreign material from origin to destination.

Based on this rudimentary and very conservative estimate Brazilian soybeans have an economic advantage over U.S. origin beans of at least \$.21 per bushel basis landed quality. To add insult to injury Brazilian soybeans typically sell at a price discount to U.S. soybeans. Freight rates favor the United States, but not enough to overcome the quality advantages and the discounted price of Brazilian soybeans.

How does this translate into direct effects on U.S. exports and market share? We know that most soybean importers, including buyers in Western Europe and Japan, turn almost entirely to South American origin soybeans as soon as that crop enters the world market, and only return to the United States as a supplier when South American supplies are exhausted. The best example to quantify this is the Japanese market. In calendar year 1984 the United States enjoyed 92.7 percent market share of the 166 million bushels of soybeans imported. By calendar year 1988 the U.S. share had slipped to 78 percent of the 172 million bushels imported. During this same timeframe South American exports to that market rose from nil to 25.6 million bushels. Quality is a major reason for market erosion in this the largest single country market for soybeans.

This is why our association winces when we hear statements like "we can deliver anything foreign customers desire; all they have to do is specify it in the contract."

A true statement but one that totally ignores the existence of competition and places the burden and associated costs of quality improvement upon the customer. If the United States is already uncompetitive on price and quality how can shifting this burden on the buyer improve our competitiveness?

II. OVERVIEW AND COMMENTS OF S. 1977

We applaud the efforts of those Senators who cosponsored Senate Bill S. 1977. It demonstrates their recognition that quality is a competitiveness issue and shows their dismay at the slowness with which the U.S. market responds to the challenge of improving our quality competitiveness when the tools to do so are readily available. We couldn't agree more with the goals and philosophy of S. 1977. A true "commitment to quality" with policies and marketing procedures geared toward quality preservation and providing incentives for improvement is the ultimate solution to the quality dilemma. Market driven solutions are preferred to legislated solutions. Lacking a more progressive attitude and more rapid adaptation by the market of these solutions, however, ASA has little alternative but to support legislative intervention.

We will examine each title of S. 1977, the Grain Quality Incentive Act of 1989 and provide you with our concerns and constructive criticism. First, we agree wholeheartedly with the findings of Congress.

Title I deals with appointment of a grain quality coordinator, his or her duties, and implementation of grain quality improvements. While we support the need for a coordinated effort it is the Secretary of Agriculture who is responsible for administering policy therefore the responsibility for coordination should be his. A coordinator would have a multitude of responsibilities but no authority. The Secretary is under no such constraints.

Many who read section 102 of title I and favor the status quo will insist that a cost/benefit analysis should precede any changes. We understand that any change with an anticipated cost exceeding \$100 million requires first an economic impact study. A cost/benefit analysis could be used to validate actions already taken, and need not precede actions taken on compelling evidence of their desirability.

To ensure fair treatment of farmers we agree that standardization of equipment and inspection procedures in unofficial inspections is indeed desirable. We agree that a licensed warehouse should be required to use approved sampling and inspection procedures and equipment approved by FGIS to inspect grain for which a warehouse receipt is issued. We would not expect, however, that each lot of delivered grain be subjected to scrutiny on every grade factor listed under the standards. The time constraints of grain receipt at harvest are such that this is just not feasible. We would, however, expect that for those factors chosen for inspection that the mode of analysis provide comparable results to official inspections. We have little confidence in inspectors licensed under the United States Warehouse Act since demonstrated competence is not a requirement for licensure. Not all unofficial inspectors are licensed even under this lax program. In order to ensure some level of competence we would suggest a mandatory certification program whereby unofficial inspectors must certify annual attendance at an inspection workshop held by FGIS or licensed official agency. Such certificate should be prominently displayed at the grain receipt point.

No one can argue with the benefits of internationally harmonized standards. U.S. participation in Codex Alimentarius and International Standards Organization (ISO) over many years has had little measurable impact. While a laudable goal, we are skeptical as to the chances of success at harmonizing grain standards internationally.

The integrity of the regulatory process in insuring a wholesome grain supply has been drawn into question most recently due to concerns over aflatoxin in corn. While soybeans have not had a similar problem recently, the chances of that remaining so in the face of technological advances in detecting minute quantities of harmful substances seem remote. To ensure public confidence is going to require much closer coordination among agencies with enforcement responsibility. The sponsors of S. 1977 have recognized this potential and given direction toward improving public confidence.

Title II of the bill requires that "grain from the U.S. shall meet the standards of cleanliness commonly achieved by competing exporters . . . not later than five years after . . . enactment . . . the Administrator shall enforce limits on easily removable nongrain material in grades number 1, 2, and 3 . . ." If this title is implemented as written there will be little need to revert to arbitrary and unenforceable prohibi-

tions on blending. Tighter grade restrictions will be self policing in this regard. We fully support the goals of this title.

Title III is less clear in its goals, specifically as it pertains to "end-use performance goals of the purchaser." Even for soybeans where more than 90 percent of the market is for solvent extraction there are still market to market differences as to which constituent, either oil or protein, is most important. We seriously question giving the Administrator the discretion to set end-use characteristics which may not be suited for specific markets or may prove impossible to fulfill given the variability of the crop from location to location and year to year. With proper factor limits in the grades there is little need for prohibitions on blending to achieve the stated goals of purity and soundness. The methods of achieving the goals are much less important than their achievement. It would be highly unfortunate if the goals were subverted by arguments over the minutiae of how they are to be achieved.

Title IV provides that export loading procedures be neutral in their implementation. FGIS has proposed changes to the current loading plan to improve on its bias favoring the shipper. If the final rule incorporates the objection of exporters to specific portions of the material portion sequence definition, we fear that the revision will not be satisfactory in reducing the current bias. We would ask the committee's oversight of FGIS to follow this issue closely so that the revised plan meets the goals as outlined in title IV.

Title V provides additional framework and guidance in revising current and developing new ones. ASA heartily endorses economic value based standards, and agrees with the three-tiered approach of quality factors within the standards. We also believe that there are indeed some conditions that make grain unsuitable for its normal intended use. We would not, however, endorse rules that would make such grain unmarketable without compensating authorization from crop insurance or other mechanisms to save farmers from such a catastrophic financial burden.

Title VI deals with support for grain quality research and testing. ASA supports increased emphasis in variety evaluation and objective testing of economically important end use properties.

ASA has funded research in soybean breeding and in near-infrared spectroscopy technology toward this end. The sense of Congress on this issue should prove invaluable in encouraging the reordering of research priorities in this regard.

If I interpret it correctly, title VII has as its principal goal providing compositional information to farmers so that they can decide for themselves which varieties have greatest demand in the market and can make informed choices as to which variety to plant. Unfortunately, the seed tag is not the optimum choice as to where the information is most useful. Farmers seldom look at the seed tag until the seed is delivered, long after the choice of planted variety has been made. Mandatory gathering of the data and making it available is the most important issue at hand.

Agricultural experiment stations, crop improvement organizations, extension personnel and commodity groups could be more effective at disseminating that information than could the seed tag.

A survey of planted varieties would be helpful to establish a baseline and measure the effect of planted varieties on intrinsic quality characteristics.

Title VIII provides for price support loan incentives for clean grain. Our interpretation of this section is that loan differentials would be established and paid at the time of loan entry. This would require sampling and inspection of eligible grain at time of loan application. ASCS staffing would have to be expanded to take on this additional responsibility. Currently, ASCS does not have the manpower to always verify quantity let alone quality at the time of loan entry. Add to this the complexity and variability in sampling a static bin of grain and you quickly develop a costly program with questionable results.

Grain condition at loan entry is not always the same condition at time of forfeiture, which can be up to 9 months later for soybeans. As an alternative we would suggest that premiums or discounts be applied when CCC takes ownership of the forfeited grain. Premiums paid on the front end of a loan, which the farmer uses only as a marketing tool, have little meaning since those premiums are repaid when grain is redeemed.

Title IX focuses on the Farmer-Owned Reserve program. Since this program does not apply to soybeans we will offer no comment on those provisions.

Title X concerns quality requirements for Commodity Credit Corporation owned grain. We agree with minimum standards for long term storage and inspection of grain at the time ownership passes to CCC. We would hope that CCC would make such provisions part of the Uniform Grain Storage Agreement.

Title XI suggests the Export Enhancement Program (EEP) be amended to include bonuses for grain exports of high quality. This is an intriguing concept, one which

could be applied to phase in more stringent standards for quality at export. This may facilitate market adjustments over the short term. We would question the wisdom of paying bonuses in the short term if no longer lasting changes are made in the interim. Getting a customer accustomed to a certain quality at a certain price, then suddenly supplying poorer quality at a similar price when bonuses end, seems counterproductive.

Title XII would modify the Federal Crop Insurance Act and title XIII the Disaster Assistance Act of 1989 in such a way as to make loss of quality eligible for insurance coverage or assistance as the case may be. We support this approach but have reservations about the advisability of making grain eligible which tests below grade 3. This may encompass a fairly large portion of the crop in even an average year. We would suggest coverage for losses due to discounts of greater than 20 percent of market value.

Title XIV grants authority for USDA to provide loans, grants, cost sharing and technical assistance to farmers and grain elevators for installing or improving grain cleaning, drying and storage equipment. We fully support such a program provided it is implemented in conjunction with necessary revisions to grain standards and grain marketing practices that would give incentives for raising and/or maintaining the quality of grain.

In general, this is a very comprehensive bill that attempts to address all aspects of the quality problem as delineated in the Office of Technology Assessment report on the competitiveness of U.S. grain quality in international markets. We commend the sponsors of the legislation for addressing a contentious issue in such a comprehensive manner.

We would like to close our testimony with some general statements and observations. First, the administration will soon propose a candidate for Senate approval to become the administrator of FGIS. We would hope that those members who have demonstrated an abiding interest in grain quality satisfy themselves that the candidate has an open mind and a progressive agenda to bring a resolution to this lingering problem of grain quality.

We would suggest that FGIS provide as part of its management plan a 5-year program of goals and specific targets which would result in redesigned standards that offer incentives for quality improvement as suggested in title V of this legislation. This would formalize the exercise and provide a format for revision and reporting.

Lastly, 1990 is the year designated by FGIS to conduct a review of soybean standards, a process conducted every 5 years. We will provide input into this process and closely monitor the actions of the new Administrator with regard to the constituency to which he responds.

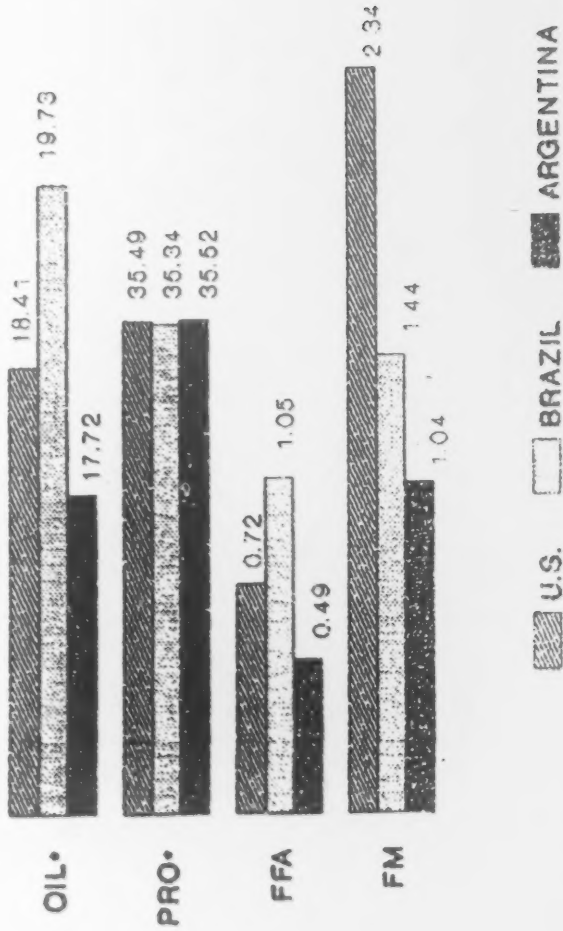
Mr. Chairman, ASA thanks you for your interest in grain quality. We consider it a critical competitiveness issue and offer you our assistance and input as you consider policy options to improve our image and competitiveness in world markets.

Again, thank you very much for this opportunity to express the view of soybean farmers.

[Exhibit 1, Comparison of U.S., Brazilian, and Argentine Soybean Quality Factors follows:]

EXHIBIT 1

COMPARISON OF U.S., BRAZILIAN, AND ARGENTINE SOYBEAN QUALITY FACTORS



•13% Moisture Basis

Sources: USDA/ARS, Tagol(Portugal),
Japan Oilseed Processors Assn.

PREPARED STATEMENT OF STEVEN A. MCCOY, PRESIDENT, NORTH AMERICAN EXPORT
GRAIN ASSOCIATION INC., WASHINGTON, DC

INTRODUCTION

It is a privilege to appear before you today. I am Steve McCoy, President of the North American Export Grain Association (NAEGA), the national association of U.S. grain and oilseeds exporting companies and cooperatives. I am pleased to have this opportunity to comment on the export grain industry's perspective on current grain quality issues, looking toward the future and this committee's action on pending quality legislation and the 1990 farm bill.

QUALITY A FACTOR IN COMPETITIVENESS

Let me begin by commending Senators Daschle and Bond for their present attention to this important subject. Grain quality is among the many factors we must consider in our efforts to preserve and enhance U.S. agricultural competitiveness in world markets. It is not the only factor. It is not the paramount factor. It is, nevertheless, a significant factor, demanding an equal commitment by all elements of the U.S. grain production and marketing system, beginning with plant breeders and farmers and extending to grain handlers and exporters and beyond, to embrace government and, ultimately, foreign buyers and end-users of U.S. grain and oilseeds themselves.

It is a subject that has received considerable, often emotional, attention in recent years, despite a credible record of U.S. performance; and real progress evidenced by actions of private sector groups and government alike. It is a record in which we can take justifiable pride.

CIRCUMSTANCES IMPROVED

One has only to contrast the circumstances we face today with those experienced 5 short years ago to see the extent of progress that has been witnessed in this area.

Recall that 1985/86 was a period of unprecedented decline in U.S. agricultural export sales, a result largely of a high value U.S. dollar, noncompetitive U.S. prices, and unmet foreign competition. Recall that, as a consequence of this reversal of fortune, there was substantial new emphasis placed on quality as a factor in U.S. competitiveness, a development fed by extraordinarily adverse climatic conditions affecting the quality of some U.S. crops. Recall further that, reflecting a general loss of confidence in the U.S. position, there was acrimonious debate about the future of U.S. farm and export policy, in which blame was parried back and forth among segments of the agricultural economy comprising the grain production and marketing system.

Contrast these extreme circumstances with the more positive circumstances we face today. Recent years have witnessed a rebound in U.S. agricultural export sales. U.S. competitiveness has been restored, a result of a lower valued U.S. dollar, successive reductions in U.S. loan rates, and a more aggressive U.S. Government export posture. The quality of this year's major export crops appears uniformly good; foreign quality complaints have declined from a one time high of 3.7 percent in FY 1987 to a low of 0.9 percent in FY 1989.¹ There is general agreement about the future of U.S. farm and export policy; producers and industry are cooperating as never before on matters of grain quality.

Obviously, this change in circumstances is not mere coincidence; it is, in fact, a reflection of hard-won progress achieved since 1985. The record of such progress is impressive. Consider, for example, the following summary of actions taken since 1985 which have improved the policy environment we face today:²

SIGNIFICANT GRAIN QUALITY ACTIONS SINCE 1985

GENERAL

- On June 30, 1987, regulations were revised to prohibit recombining or adding dockage or foreign material to any grain. Research is being conducted on the impact of prohibiting recirculated dust at export elevators.

¹ *FGIS Annual Report to Congress*, p. 25.

² Information derived from joint letter of November 21, 1989, to Senator Daschle from nine farm and industry organizations.

- On June 30, 1987, insect infestation standards for all grain were significantly tightened effective May 1, 1988. At the same time, the U.S. Standards for Grain were revised to provide more uniform language and provisions.

- On June 21, 1988, FGIS submitted a report to Congress on its survey of 178 domestic and 89 foreign end-users of grain. FGIS reported that most of these buyers found information provided by the standards important.

- Revisions to the shiplot inspection plan were proposed on January 3, 1989. The sweeping proposal would revise breakpoints, revise criteria for review inspections, redefine material portions and incorporate a new protein determination acceptance plan. A final rule is expected in early 1990.

- Recent FGIS research activities include: (1) chemical residue analysis; (2) weed seed toxicity study; (3) corn protein, oil, moisture, starch and fiber testing; (4) corn breakage tester evaluation; (5) single kernel moisture tester; (6) insect detection; (7) protein quality; (8) rapid test for high and low erucic acid in rapeseed; (9) sorghum protein, starch, and fiber testing; (10) barley protein; (11) shriveled and wrinkled soybeans; and (12) wheat classification using image analysis.

- FGIS is investigating the use of automated methods for providing monitoring and supervision of official grain weighing.

CORN

- FGIS is conducting a survey of the relative amounts of broken corn and foreign material present in commercial samples of corn. The definitions for these factors were adopted on June 30, 1987. FGIS is also participating in a jointly sponsored project to evaluate the impact of revising the U.S. Standards of Corn to make broken corn and foreign material separate factors.

- Commercially available aflatoxin test units were evaluated for use in official procedures to make aflatoxin testing more widely available and cost-effective to the agency. New procedures were implemented on October 1, 1989. These official procedures are available for use by the public.

WHEAT

- On May 1, 1987, FGIS began reporting wheat dockage to the nearest tenth percent (change from nearest 0.5 percent) and wheat protein on a 12 percent moisture basis.

- A protein monitoring program was established in May 1987. Calibrations for moisture meters and near-infrared reflectance instruments are revised annually and updated as necessary.

- FGIS has conducted an analysis of the cost impact of combining the factors dockage and foreign material in wheat standards. Results of the analysis were submitted to Congress on June 1, 1989. The issue was discussed again by a subcommittee of the FGIS Advisory Committee and the subcommittee's report was accepted by the full committee on November 2, 1989.

- A proposal was issued on June 6, 1989, to revise the definition of White wheat to enhance consistency of the Standards and facilitate marketing of White wheat.

- Falling number testing to determine sprout damage was expanded and upgraded in October 1989. FGIS increased its capability by investing in state-of-the-art test equipment making testing available in locations throughout the Northwest.

- A wheat classification working group was established to provide input to FGIS and ARS on wheat classification research. Analysis of over 15,000 wheat samples per crop-year was conducted in 1988 and 1989 to develop hardness calibrations. Wheat hardness data on most varieties grown in the United States was published in September 1989. A new method of separating wheat by classes is expected to be online by July 1991.

- The wheat standards were revised to include in the Sample grade definition a limit equivalent to the 32 insect-damaged kernels per 100 grams FDA Defect Action Level. This very significant change introduced a new sample grade criteria to harmonize FDA and FGIS standards.

- The 5-year review of the wheat standards is scheduled for 1990. FGIS has sought public comment on ways to improve the U.S. Standards for Wheat through the rulemaking process.

CANOLA

- Comments were solicited on the need for rapeseed standards in the United States. FGIS is evaluating the comments received by the close of comment period on August 28, 1989.

SOYBEANS

- Effective August 1, 1986, FGIS revised interpretive line slides for mold damage to meet the trading rule of 0.75 percent free fatty acid.
- At the request of some end users, FGIS made available a service on September 16, 1988, to determine the percentage of shriveled and wrinkled soybeans upon request.
- Soybean protein and oil became official criteria effective September 4, 1989. Since that time, FGIS reports that over 1,200 official samples have been analyzed for these factors.

SORGHUM

- FGIS defined the individual components broken kernels and foreign material on June 30, 1987. These factors were reported on all domestic certificates and export shiploading logs beginning July 31, 1987. These data are being evaluated by the agency to determine the impact of separating broken kernels and foreign material into two separate grading factors.
- On May 16, 1989, FGIS solicited comments on its periodic review of the U.S. Standards for Sorghum. FGIS is considering separating broken kernels and foreign material into two factors, reducing the level of brown sorghum allowed in yellow sorghum, and revising classification terminology to more accurately describe classes of sorghum.
- Sorghum odor determination procedures were revised to provide for more uniform and impartial application of odor evaluation. Basis for the change was a survey of the official system to determine intermarket variability in odor determination. The revision was effective June 30, 1989.

RICE

- The U.S. Standards for Rice were revised on May 18, 1989, to make rounding procedures more accurate, incorporate infestation tolerances, and provide more uniform provisions and language.

ROLE OF GOVERNMENT

The Congress has played a largely positive role in the continuously evolving quality policy debate.

An Office of Technology Assessment (OTA) study mandated in the 1985 Farm Act and released in the summer of 1989, contributed new information and insight about the "systemic" nature of quality problems affecting U.S. export commodities. The 1986 Grain Quality Improvement Act emphasized new objectives for quality policy; and required certain changes in regulations affecting recombination of dockage and dust with grain. The 1988 FGIS Reauthorization Act reaffirmed support for basic inspection and regulatory activities and expanded the size of the FGIS Advisory Committee to include academicians and others with expertise in grain quality matters.

ROLE OF THE PRIVATE SECTOR

Government's role in the process has been important. However, an even more significant factor in recent policy development has been the interindustry private sector Grain Quality Workshop established by the North American Export Grain Association (NAEGA) in December 1985, which continues today under the leadership of the National Grain and Feed Association (NGFA).

Since 1986, all elements of the U.S. agricultural community have been engaged in an ongoing effort to develop consensus recommendations addressing important quality issues. This effort—the Grain Quality Workshop process—resulted early in a breakthrough report entitled "Commitment to Quality" which outlined policy proposals and recommendations in 19 areas, covering issues such as: dockage in wheat, protein in wheat, sorghum grade changes, soybean damage and interpretive line slides, representative sampling and barge loading plan, separation of broken grain and foreign material, blending, grain dust disposition, shiplot loading plans, test weight determination, moisture meter calibrations, end-use value tests, wheat classification, control of corn breakage, foreign complaint procedures, education programs; and continuation of workshop efforts.

The record of the past 2 years demonstrates conclusively the effectiveness of this voluntary effort as a mechanism for prudent, responsive and economically sound improvement in our Nation's grain quality system. Indeed, a review of recent history

tends to reinforce the impression that changes in grain quality practices and standards are best achieved that are achieved through voluntary cooperative efforts involving FGIS and the private sector.

Of the "Commitment to Quality" Report's six proposals, five have been subject to subsequent action or rulemaking by FGIS. Action has resulted from many of the Report's other recommendations. Review continues on proposals and recommendations contained in the Report that have not yet been subject to action. The Workshop has also, since 1986, undertaken groundbreaking new efforts in areas such as: OTA study findings, regulatory and legislative changes, research and improved measurements of intrinsic properties of grain, development and implementation of the optimal grading system, insect tolerances, Cu-Sum plan revisions, dust, the barge sampling plan, BCFM in corn, recombination of BC to the grain stream, wheat variety identification, wheat "sample grade" tolerances, removal of Red Durum from the definition of unclassified wheat, insect damaged kernels in wheat, soybean loan rate differentials, soybean breeding strategies, testing of soybean oil and protein, changes in sorghum standards, and changes in canola standards.

Groups and government agencies contributing to the 1986 study included the: American Soybean Association; American Farm Bureau Federation; American Seed Trade Association; Agricultural Stabilization and Conservation Service; Dekalb-Pfizer Company; Federal Grain Inspection Service; Foreign Agricultural Service; Grain Sorghum Producers Association; Grain Elevator and Processing Society; Iowa Farm Bureau; Iowa State University; Illinois Farm Bureau; Kansas State University; Louis Dreyfus Corporation; National Association of Wheat Growers; National Council of Farm Cooperatives; National Corn Growers Association; National Barley Growers Association; National Grain and Feed Association; National Grain Trade Council; North Dakota Barley Council; North Dakota State University; North American Export Grain Association; Nebraska Wheat Council; Nebraska Grain Sorghum Board; Office of Technology Assessment; University of Illinois; U.S. Feed Grains Council; U.S. Wheat Associates; and Wheat Quality Council.

Many, if not all, of these agencies and organizations maintain their membership in the Grain Quality Workshop process today. The Workshop process itself continues, providing a forum for dialog and consensus-building among farmers, handlers, exporters, academicians and government representatives. Implicit in this effort is an unfinished agenda that promises further improvement in our Nation's quality system. It is an agenda that should be supported by Congress, as it has been supported by all segments of the agricultural community.

FOREIGN QUALITY COMPLAINTS

The Grain Quality Workshop process and the results that have been achieved by it offer concrete evidence of the progress that has been made in recent years toward greater public sector-private sector cooperation in quality matters. It is not the only evidence, however. Throughout the period, NAEGA and U.S. grain and oilseeds exporting companies have continued their ongoing cooperative efforts with the U.S. Government designed to meet and address foreign quality complaints.

It is important to note that foreign quality complaints have declined precipitously during the past few years. In FY 1989, only 24 foreign complaints were reported by FGIS on tonnage totaling 1 million tons to 16 countries, a mere 0.9 percent of the total FY 1989 export tonnage inspected. Foreign complaints registered against U.S. grain exports represented only 3.7 percent of those shipments in FY 1987. They were only 1 percent in FY 1988.

This is an impressive record of current customer satisfaction with the quality of U.S. grains and oilseeds. It also tends to reinforce NAEGA's long held view—based on practical experience—that quality complaints increase during periods of sluggish demand, and correspondingly, decrease during periods of demand growth (such as we are currently experiencing). Such a pattern suggests that price, rather than quality, is the significant factor determining customer satisfaction.

Nevertheless, NAEGA and the export grain companies continue to play an active role on the quality front. When complaints arise, we attend to them, both in cooperation with government and independently. Where possible, we cooperate with FGIS and FAS in addressing foreign complaints, through participation in missions overseas and other activities sponsored by government, designed to address such problems. NAEGA's participation in one such recent effort—a test shipment of wheat to the Soviet Union designed to prove the efficacy of U.S. fumigation technology—is notable in that regard. The test shipment achieved a positive outcome both from the perspective of the Soviets and the United States. As a result of it, Soviet complaints regarding insect infestation have been reduced as a factor in the current

trade environment and the Soviets, as you know, have purchased record quantities of U.S. grain this year.

IS NEW LEGISLATION NEEDED?

The relatively exhaustive survey of recent developments included herewith is intended to make a simple point: most, if not all, of the changes in quality performance and quality policy achieved since 1985 have been achieved without prior legislative involvement or dictate. No mention is made here of the work of the FGIS Advisory Committee, other advisory committees, and the Wheat Classification Group, whose activities have been an important source of additional cooperation and progress on the grain quality front. Neither is substantial treatment given to important individual group activities, such as NAEGA's own work with the Soviets and cooperator market development group activities, which have contributed to a better understanding of export grain quality issues at home and abroad.

The discussion presented leads us to the inevitable question of whether further legislation is needed this year. Again, there appears to be important consensus on this point.

A November 21, 1989, letter to Senator Daschle from nine farm and industry organizations including NAEGA and the American Farm Bureau Federation, American Feed Industry Association, American Seed Trade Association, National Association of Wheat Growers, National Barley Growers Association, National Grain and Feed Association, National Grain Trade Council, North American Export Grain Association, and National Wheat Improvement Committee, concurred in the September 1989 resolution of the Grain Quality Workshop recommending that "changes in the grading system be addressed through the regulatory process and not through legislation." A January 1990 Workshop resolution noted its participants' unwillingness to support efforts to "pre-empt the regulatory process through legislation." A 1990 National Association of Wheat Grower (NAWG) resolution notes that organization's belief that "grain standards should be arrived at through industry workshops composed of farmers, grain traders and grain handlers."

NAEGA continues to work, together with other organizations, in the Workshop process to evaluate legislative proposals contained in S. 1977, the "Grain Quality Incentives Act of 1989." Recent resolutions adopted by the Workshop (see attached) express some sympathy for the legislation's research and coordination objectives. However, the Workshop is more critical of other provisions of the bill, particularly provisions contained in titles I, III, IV, and V of the bill.

NAEGA shares many of the Workshop's concerns regarding S. 1977. We believe, together with the Workshop, that "legislation to force higher quality grain into the export market limits the ability of the market to respond to a wide range of quality preferences." We are impressed by the intent of the authors to improve the competitive climate affecting U.S. agriculture. However, we dispute that the objective sought can be appropriately achieved through legislative changes proposed in S. 1977.

I will not go into matters addressed by the bill in detail. Suffice to say that we will work with the committee to develop future policy in this area consistent with the goals of improving grain quality and enhancing U.S. competitiveness. We trust that we will have further opportunities to review the legislation with you at length. As we do so, let us bear in mind the cautionary note sounded by OTA in its recent report.

Changes in standards and policy, OTA said, "must be evaluated against the criteria of providing information that is worth the cost of obtaining it." Proposals for change, OTA reported, "must be tempered by current capabilities of the industry, the cost of adjustments versus potential benefits, the realities of international trading rules, and the history of the grain industry." Quality "must be evaluated in the context of technology, competition, foreign demand and processing requirements." NAEGA concurs wholeheartedly with this conclusion and recommends the committee consider it as it approaches the task of evaluating new policy affecting grain quality this year and in future years.³

CONCLUSION

We have attempted in this testimony to note some of the pitfalls associated with legislating quality in the current economic and political environment. We have

³ *Enhancing the Quality of U.S. Grain for International Trade*, Office of Technology Assessment, March 1989, Summary, p. 11.

noted substantial progress that has occurred in recent years outside legislative channels, which, in a short period, has significantly transformed the environment affecting grain quality. We have shown the evidence of this improvement in the form of a decline in the recorded incidence of foreign quality complaints. We have also commented on the recent record sales of U.S. export commodities, particularly corn, which are themselves adequate commentary on the competitiveness of all qualities of U.S. grain in international commerce today.

Of course, there will always be complaints about quality, regardless of the system in place or standards enforced. Such complaints are a normal part of the market; they are not necessarily indicative of a breakdown of good order or a failure to honor commitments honorably undertaken under commercial contract terms between buyer and seller.

The market place is the ultimate arbiter of quality. We should always strive to market grain consistent with the highest standards competitively established. However, artificial changes in the marketing system designed to "improve" quality can have unanticipated adverse consequences for producers and exporters alike.

In a competitive international market place, costs of "improving" quality cannot be borne by buyers. Consequently, they will be borne by producers in the form of lower prices and exporters in the form of a disruption of current trade. These are the realities of the present circumstances affecting quality. They require a special consideration—a special discipline, if you will—in resisting change for change's sake. U.S. grain quality policy must be approached with the objective of U.S. competitiveness always in mind. We should not move to sacrifice our current system and advantages, by legislation or otherwise, except by solid, firm and consensus-based action supported equally by all segments of the agricultural community.

It has been a pleasure to appear before you today. I am happy to answer any questions you may have.

[The letter of November 21, 1989, to the Honorable Tom Daschle and the attachment "Grain Quality Workshop Actions," January 30-31, 1990, follow:]

NOVEMBER 21, 1989.

The Honorable TOM DASCHLE,
U.S. Senate, 317 Hart Senate Office Building, Washington, DC.

DEAR SENATOR DASCHLE: The undersigned producer and agribusiness organizations appreciate your allowing the grain producing, marketing and processing industries to informally review your proposals on grain quality before you introduce them as legislation.

We agree that quality is an important factor in grain produced both for export and for domestic consumption and we share your ongoing commitment to improving the chain of production and distribution that begins on the farm and ends with the domestic or foreign consumer.

Illustrative of this commitment is the creation of the "Grain Quality Workshops," a forum established in 1985 to address grain quality issues. In these workshops, a wide range of quality issues have been addressed by virtually every segment of the grain producing, handling and marketing sectors. These organizations ensured the involvement of the State land-grant universities by sponsoring grain quality experts from these institutions at the workshops, and sought the participation and advice of government agencies such as the Federal Grain Inspection Service, Agricultural Stabilization and Conservation Service and Foreign Agricultural Service.

We believe the open format and comprehensive nature of the workshops has made possible a free exchange of ideas and has brought about a better understanding of the concerns and problems of each segment of the grain industry by other segments. The open exchange of ideas allows these experts including producers, handlers and merchandisers to arrive at objective, well-reasoned approaches to technically complex grain quality issues. The workshop groups have critiqued legislative and regulatory proposals addressing the inspection, marketing and handling of grain. Workshop participants continue to address a wide array of issues including: intrinsic value, cleanliness, insect infestation, residues, inspection, research and food safety.

The workshops have been extremely active, recommending to FGIS more than 50 resolutions involving all major grains and oilseeds. Attached is a list of significant resolutions resulting from the Grain Quality Workshops and a list of actions adopted by the Federal Grain Inspection Service (FGIS) since 1985. We cite the workshop resolutions and the actions taken by FGIS as proof the U.S. grain grading system is not stagnant as some people have alleged. We strongly urge you and your staff to analyze these actions and resolutions. These changes have not occurred without cost

to the grain producer, handler and processor. The grain quality workshops also have provided an opportunity to identify potential costs associated with changes in the grain standards and inspection system, and have urged Federal agencies to assess those costs as part of the rulemaking process when considering such proposals.

We appreciate your commitment to encourage the industry to produce and market higher quality grain and oilseeds. However, we urge your thoughtful consideration of the recent resolution of the workshop which states:

"The workshop recommends, as a general rule, that changes in the grading system should be addressed through the regulatory process and not through legislation, for example, on the issue of wheat dockage and foreign material. Congressional involvement would be welcomed in pursuing adequate funding for USDA/ARS for research on improved measurement of intrinsic properties of grain, such as wheat classification and wheat quality laboratories."

The undersigned organizations are in agreement with the above resolution. Any change made in the grain marketing system, whether regulatory or legislative, should only be made following a complete study of its market implications, including the costs to farmers and the marketing system as well as reasonably expected benefits.

The next grain quality workshop will be conducted November 30 and December 1, 1989. We would welcome you or any member of your staff to participate in the meeting. By doing so, we believe you will be able to witness firsthand how this widely supported voluntary industry effort accomplishes its purpose.

Again, thank you for allowing us to comment on your proposal.

Sincerely,

American Farm Bureau Federation; American Feed Industry Association;
American Seed Trade Association; National Association of Wheat
Growers; National Barley Growers Association; National Grain and
Feed Association; National Grain Trade Council; North American
Export Grain Association; National Wheat Improvement Committee.

[List of significant resolutions resulting from the Grain Quality Workshops and a list of actions adopted by the Federal Grain Inspection Service since 1985 follows:]

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Grain Quality Workshop Actions

January 30-31, 1990

The Grain Quality Workshops took the following actions during its meeting January 30-31, 1990:

Resolutions Approved Concerning Daschle-Bond Grain Quality Bill (S. 1977)

The Grain Quality Workshops approved the following resolutions pertaining to the grain quality legislation (S. 1977) introduced in the Senate by Sens. Thomas A. Daschle, D-S.D., Christopher "Kit" Bond, R-Mo., Patrick Leahy, D-Vt., and Robert Kerrey, D-Neb. A companion measure has been introduced in the House by Rep. Douglas Bereuter, R-Neb.

Resolution #1: S. 1977 is based upon the assumption that legislative changes in grades and standards will solve the problem of complaints by foreign buyers and loss of market share.

The purpose of grades and standards is to describe the economically important characteristics of grain so that buyers and sellers may arrive at a price based upon value. Legislation to force higher quality grain into the export market limits the ability of the market to respond to a wide range of quality preferences.

Procedures now in place permit FGIS to develop and change grades and standards to meet the objective of market incentives to improve quality consistent with cost and value. Since 1986, the grain quality workshops have developed sound proposals to improve grain quality and meet preferences of domestic and foreign customers. Many proposals have been implemented and actions by FGIS and the entire grain industry have improved the system. The Grain Quality Workshops are committed to continuing the process and is unable to support sections of the bill which preempt the regulatory process through legislation.

Resolution #2: Concerning the bill's provision (Section 101) mandating that the Secretary of Agriculture designate an individual to serve as a federal Grain Quality Coordinator, the Grain Quality Workshops approved a resolution not to oppose such a position, but recommended that

it not involve the hiring of another government official, but rather that an existing official within the U.S. Department of Agriculture be so designated.

Resolution #3: Concerning the bill's requirement (Section 102) that an economic impact analysis be conducted on the legislation within 180 days after its enactment, the Grain Quality Workshops approved the following resolution: "Economic impact studies should be completed when specific rules are proposed. The study requirements should be inserted under Title V of the legislation where specific actions are required."

Resolution #4: Pertaining to the bill's requirements (Section 103) to standardize unofficial inspections, the Grain Quality Workshops approved the following resolution: "In the event that grain delivered by a producer to a facility with a Uniform Grain Storage Agreement is unofficially inspected and a dispute over that unofficial grade results, a representative sample shall be submitted for an official inspection for settlement purposes."

Resolution #5: Concerning the bill's requirement (Section 104) that the Secretary of Agriculture report to the House and Senate Agriculture Committees on the harmonization of U.S. grain standards, tests and testing equipment with those of foreign nations, the Grain Quality Workshops adopted a resolution opposing the provision.

Resolution #6: Pertaining to the bill's provision (Section 105) on a Sense of the Congress resolution that government agencies cooperate in enforcing laws and regulations governing grain purity and safety, the Grain Quality Workshops adopted a resolution not opposing the provision.

Resolution #7: Concerning the bill's provisions (Section 201) pertaining to export grain, the Grain Quality Workshops adopted a resolution deleting the word "Exports" from the title of the bill's provision, and replacing the entirety of Title II with the following language: "It is the Sense of Congress that the U.S. grain industry should continue to strive to reduce the level of dockage and foreign material in grain, and further that Congress shall consider

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funding future research to achieve this objective."

Resolution #8: Concerning the bill's provisions (Section 301) entitled "Improving the Physical Soundness and Purity of Export Grain," the Grain Quality Workshops adopted the following resolution: "The Grain Quality Workshops oppose Title III. However, the Workshops endorse the concept of improving the physical soundness of grain which can be done through the normal FGIS regulatory review process. The Workshops support the establishment, by administrative rulemaking, of quality criteria and factor limits that identify grain as unsuitable for blending where the stability of the mix would be adversely affected."

Resolution #9: Concerning the bill's provisions (Section 401) on shiploading export requirements and standards, the Grain Quality Workshops adopted a resolution stating that: "This section has been addressed by FGIS and is currently being revised and is in the final stages of rule-making."

Resolution #10: The Grain Quality Workshops voted to oppose the bill's provisions (Section 501, Title V) concerning criteria for classification, grades and standards.

Resolution #11: The Grain Quality Workshops adopted a resolution supporting the bill's provisions concerning grain quality research and testing (Section 601). The Workshops resolution stated: "The Grain Quality Workshops supports this section, but would emphasize that the development of objective tests for the end-use properties of grains, particularly the quick testing of protein, starch, oil and other factors, with adequate funding to support this work."

Resolution #12: The Grain Quality Workshops adopted a resolution stating it does not oppose the bill's provisions (Section 602) concerning a Sense of the Congress resolution encouraging cooperative efforts between the Federal Grain Inspection Service, Agricultural Research Service and land-grant universities in grain quality research.

Resolution #13: Pertaining to the bill's provisions (Section 603) of a Sense of the Congress resolution concerning tests for grain purity, the Grain Quality Workshops adopted a resolution deleting the last five lines of Section 603(b), lines 19 through line 23 as follows: "...and incorporate the limits on the presence of such impurities in grain, as established by the Food and Drug Administration and the Environmental Protection Agency, into the official grain grade classification system established under the United States Grain Standards Act (7 U.S.C. 71 et. seq.). The Workshops voted to replace the deleted lines with the following sentence: "The jurisdiction and regulation of food safety should remain with the present agencies and the Federal Grain Inspection should continue to operate under the present memorandum of understanding."

Resolution #14: The Grain Quality Workshops adopted a resolution to replace Titles VI (Section 601, "Grain Quality Research and Testing") and VII (Section 602, "Variety Performance Information") of the bill with the following language:

"1. Basic research of intrinsic quality should be encouraged and funded at the federal level.

"2. Applied research and testing of intrinsic quality should be encouraged and funded properly. There is a wealth of information available from USDA concerning the characterization of present and future cultivars that could enhance quality improvements in the marketplace.

"3. Information on applied research should be in the public domain and available for use in the marketplace. This includes the results of testing at the federal and state levels. The USDA Extension Service should be charged and funded to carry out this mission.

"4. The USDA should conduct cultivar surveys and compile information from cultivar surveys for all crops, i.e., commercial acreages devoted to a particular cultivar. (USDA did this for wheat until funds were cut approximately two years ago.)

"5. The USDA Economic Research Service should analyze the cultivar surveys in conjunction with the applied research information to assess the impact of cultivars on intrinsic quality. This impact information is a critical first step towards the future improvements of intrinsic quality on markets."

Resolution #15: The Grain Quality Workshops voted not to address Titles XII (Section 1201, "Crop Insurance Coverage for Loss of Quality") and XIII (Section 1301, "Disaster Payments for Loss of Quality") of the bill because they pertain to USDA price support programs and not grain quality.

Resolution #16: The Grain Quality Workshops did not reach a consensus on Title XIV (Section 1401) pertaining to "Assistance for Improvements in Grain Quality."

Resolutions Approved on Other Issues

The Grain Quality Workshops also adopted these resolutions on grain quality matters unrelated to the Daschle-Bond grain quality bill:

■ Request that the Federal Grain Inspection Service place a higher priority on developing a correlation between stirring numbers and falling numbers with visual sprout damage in wheat.

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■ The Grain Quality Workshops request additional funds be appropriated by Congress for further Agricultural Research Service research on TCK smut and other bunt disease studies and for additional support of USDA's Wheat Quality Research Laboratories.

Resolutions Approved Pertaining to Restructuring of Workshops

The Grain Quality Workshops unanimously approved a restructuring of the Workshops in the following manner:

—Rotate the position of chairman annually between the following four categories of Workshop participants: 1) Producers; 2) Grain Handlers; 3) Grain Exporters; and 4) Others.

■ Select a vice chairman from one of the membership categories not represented in the chairmanship.

■ Meet at least every six months.

■ Selection of subgroup chairmen annually.

■ Subgroup chairmen are to provide agendas well in advance of the meeting.

■ A "mission statement" is to be drafted by a steering committee, consisting of the chairman and grain category subgroup chairmen.

■ Only resolutions that are approved are to be circulated and publicized. Final approval is made by steering committee.

■ A letterhead with a general description of the Grain Quality Workshops should be developed, but individual organizations should not be listed on the letterhead.

PREPARED STATEMENT OF WINSTON WILSON, PRESIDENT, U.S. WHEAT ASSOCIATES,
INC., WASHINGTON, DC

Mr. Chairman, and members of the subcommittee.

I am Winston Wilson, president of U.S. Wheat Associates, which is the market development organization funded by U.S. wheat producers and the Foreign Agricultural Service of the U.S. Department of Agriculture. Our primary mission is to promote the use of wheat around the world and to make sure that the United States gets a major share of world wheat markets. We carry out this mission through 14 regional offices in all of the major wheat-consuming areas of the world.

Over the years we have found that grain quality is an important competitive factor. While quality is of somewhat less importance than price, it still remains a major factor in U.S. market share in most wheat-consuming countries around the world. As a producer-funded organization, with one of our missions being representing foreign buyers in the U.S. market, we often find ourselves caught in the middle on quality issues. While wheat producers are very strongly in favor of improving the quality of the product which we market overseas, they are also very mindful that the cost of significant change and improvement will come, for the most part, from their net proceeds from the sale of wheat.

During the past 4 years, U.S. Wheat, along with other farm and grain trade organizations has been involved with the Grain Quality Workshops. We believe that several positive changes have occurred in U.S. wheat marketing as a result of the recommendations of this group. Some of the more significant changes have included more accurate certification of dockage, more accurate certification of protein levels, tighter limits on insect infestation, and some forward movement on a more equitable Cu-Sum loading plan. However, the latter has still not been published in the Federal Register and at this point we are not certain that adequate progress has been made.

We believe that the united industry approach to a solution of these problems is an effective and reasonable approach to improving U.S. wheat quality. The U.S. Wheat Board of Directors has endorsed a continuation of this approach but has also indicated a strong desire to reduce average dockage content of U.S. wheat shipments by almost 50 percent over the next few years. We believe very strongly that in order to accomplish this goal, adequate price incentives must exist throughout the system—beginning at the farm gate.

While U.S. Wheat Associates is prohibited from taking positions on specific legislation, I will make some comments on specific quality issues which we believe need to be addressed by the U.S. grain industry.

Many importers do not believe that U.S. wheat quality is as good as that of other exporters, particularly Canada and Australia. For example, the OTA survey of wheat importers found that most overseas end-users preferred either Canadian or Australian wheat over comparable classes from the United States. There was no class of U.S. wheat that ranked as the first choice for the various end uses identified in the survey.

As another example, data from the Japanese Food Agency quantifies the differences between U.S., Canadian and Australian wheat. While U.S. wheat performs better on some quality characteristics, dockage, foreign material, damaged kernels and shrunken and broken kernels are all higher in U.S. wheat than in wheat from the other two. Over the last 6 years, dockage in Canadian Spring wheat has averaged just over 0.1 percent and in Australian wheat classes between 0.3 percent and 0.4 percent. In contrast, the dockage in U.S. wheat has been between 0.6 percent and 0.8 percent.

In my own visits with overseas customers, I have frequently encountered observations that U.S. wheat generally is not as clean, not as sound and not as uniform as that from Canada and Australia. The organization that I represent strongly believes that this perception of U.S. wheat quality costs U.S. wheat producers and the entire wheat industry lost revenue in the form of lost sales and reduced prices for the wheat that is sold.

There are a number of specific areas where the quality of U.S. wheat or the performance of the U.S. system can be improved. These will be discussed below:

DOCKAGE

Dockage levels in U.S. wheat need to be reduced. Dockage represents additional freight and other costs; is the major source of insect infestation and quarantined weed seeds; and causes pollution problems in the form of airborne dust. Dockage also tends to separate when being loaded. Since most vessels do not go to a single destination but instead are divided among several mills, the separation and nonuni-

formity of the dockage means that some mills will receive much higher levels of dockage than identified on the inspection certificate and others, lower levels. In addition, as noted above, competing exporters do a better job of cleaning their wheat. The U.S. Wheat Associates' Board of Directors has set an initial goal of encouraging a reduction in the average dockage in wheat exported from the United States to 0.4 percent.

SOUND GRAIN

Some types of damage in wheat can cause substantial reductions in end-use quality even in small amounts. Heat-damaged and insect-damaged kernels are already treated separately in the grain standards because of the effect on quality of these two types of damage. Other types of damage can also affect quality, but are not addressed separately in the standards. Sprout damage, for example, has important, adverse effects on quality in very small amounts and occurs somewhere in the United States almost every year. Heavily sprouted wheat often is freely blended into sound grain up to the limit allowed for all damage, resulting in reduced quality performance in a much larger portion of the wheat class than was originally affected. This tends to reduce the value of the entire class and erodes the buyers' confidence in the quality of U.S. wheat not only for the current year but possibly for succeeding years as well. Canada and Australia, on the other hand, are largely successful in isolating damaged grain and marketing it separately as feed wheat. Thus, the reputation of their milling wheats is maintained. The United States needs to do a better job of limiting the levels of adverse types of damage in wheat.

SHIPLOT LOADING PLAN

FGIS uses a statistical acceptance plan, Cu-Sum, to determine whether grain being loaded aboard a vessel meets the requirements specified in the purchase contract. It has been acknowledged by FGIS for some time that the plan currently in use is not statistically sound and can allow poorer quality grain to be loaded than would be expected under a sound plan. FGIS has been working on a revised plan for several years, but a final rule on the revised plan still has not been published. U.S. Wheat Associates believes it is fundamental to the integrity of FGIS to establish the principle permanently that all grain which is officially inspected and weighed for export be loaded according to a plan that statistically assures fairness by favoring neither the buyer nor the seller in meeting the requirements specified by the contract.

RESIDUES AND HEAVY METALS

U.S. Wheat Associates has received increasing numbers of inquiries in recent years for information about pesticide residues and heavy metals from importers wanting to know the amounts of these compounds in the wheat they receive. In addition, the current GATT negotiations include discussions which may lead to international harmonization of the tolerances allowed for residues. Currently the United States has virtually no information available concerning the commonly occurring levels of residues or heavy metals in U.S. exports either to provide curious importers or to guide negotiators. Other countries, particularly the EC countries, are likely better informed as to the tolerances acceptable to them. Time is running out to gather such information as the negotiations progress. If tolerances become established that the United States cannot routinely meet, this may serve as an embarrassing impediment to U.S. wheat and other grain exports.

A great deal can and has been done to improve U.S. wheat quality. A few examples have been cited above. However, it has been difficult to achieve consensus within the wheat industry as to what additional steps should be taken. It frequently is argued that if a buyer wants better quality, he should write it into his contract specifications and be willing to pay for it. However, this passive attitude toward quality overlooks the aggressive quality marketing of competing exporters who willingly provide higher quality grain than specified, which prompts the buyer to question why any change in specifications should be required. For many buyers, it is easier and more sensible to switch suppliers than to switch specifications.

The passive approach also overlooks the fact that it is difficult for U.S. exporters to offer cleaner or higher quality grain than is commonly available in the U.S. system. Thus, offers for low dockage wheat are relatively expensive and uncompetitive when a buyer does request them. It also overlooks the fact that those who buy grain overseas usually are not the ones who process it. The buyers have little understanding of grain quality issues, and the processors, on the other hand, have little knowledge of wheat purchasing practices. They both know where the wheat comes

from. It is a simple matter for processors to ask for wheat from one source instead of another, and it is relatively easy for their buyers to understand and satisfy that request.

Efforts to provide cleaner grain need to go hand-in-hand with efforts to encourage importers to specify cleaner grain. U.S. Wheat Associates has worked through its overseas market development program to educate and encourage buyers to include quality specifications in their contracts. However, this educational effort can be successful only if the U.S. system is ready to provide the quality demanded at a reasonable price. This will require effort and cooperation on the part of the U.S. industry and government.

[The prepared statement of the National Grain Trade Council and the reprint of S. 1977, Grain Quality Incentives Act of 1989, follow:]

NATIONAL GRAIN TRADE COUNCIL

SUITE 1020

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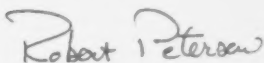
March 1, 1990

The Honorable Thomas Daschle
Chairman
Subcommittee on Agricultural
Research and General Legislation
Committee on Agriculture,
Nutrition and Forestry
United States Senate
647 Senate Dirksen Office Bldg.
Washington, DC 20510

Dear Senator Daschle:

Enclosed is the National Grain Trade Council's statement on S. 1977, the "Grain Quality Incentives Act of 1989." We ask that our statement be included in the record for the hearings held on February 8 and 22, 1990.

Sincerely,



Robert R. Petersen
President

enclosure

Statement of

National Grain Trade Council

before the

Subcommittee on Agricultural Research and General Legislation
Committee on Agriculture, Nutrition and Forestry
United States Senate

on

S. 1977, the Grain Quality Incentives Act of 1989

February 22, 1990

Mr. Chairman and Members of the Subcommittee:

The National Grain Trade Council appreciates this opportunity to make its views known on S. 1977, "Grain Quality Incentives Act of 1989."

The Council is a national trade association whose policy-making members are grain exchanges, boards of trade, and national grain marketing organizations. The Council has a number of associate members who include grain companies and related businesses.

Basically, S. 1977 addresses four key areas: grain cleanliness, blending, end-use performance of grain, and government quality incentives.

The Council is deeply troubled by the underlying premise of the measure -- that Congress should mandate strict parameters for grain standards and handling practices. The bill would make far-reaching changes that would affect all involved in the grain marketing system. We believe changes in such a complex area are better addressed by industry-wide efforts such as the Grain Quality Workshops and through the rule-making process, as well as by the market itself.

We believe the key issue in S. 1977 is cleanliness. As this issue is debated, we would direct the focus to the economics of "clean grain" for producers and handlers. Cleaning grain will require a huge investment by the handling industry and change handling practices in a way that will result in costs to producers. The Subcommittee has received estimates that achieving a 0.5 percent dockage level in wheat will likely cost a farmer at least 5 cents; furthermore, we believe the legislation would impose similar costs on other commodities. The cost to the grain handling industry and producers would be substantial, while the benefits may be illusory.

Let us clearly state that the Council supports improvements in grain quality. We have participated in the Grain Quality Workshops since they were established in 1985. We believe that process, involving all sectors of the grain industry, and working through the regulatory process is the preferable means to address quality issues and concerns, rather than legislation.

The Workshops provide an important forum for addressing quality concerns. Grain quality issues are complex and they merit open debate among knowledgeable people who are the most directly affected. The implications of the changes need to be carefully weighed and discussed. Few lend themselves to quick decisions. We recognize this thoughtful, consensus approach can frustrate the impatient. But we are dealing with a system that works well and in which changes can create a multitude of side-effects that are not always apparent at first blush. We understand the impatience, but believe it is crucial to the long-term credibility of the United States grain marketing system that changes be addressed carefully with due deliberation.

The National Grain Trade Council represents members who earn their living every day marketing and handling grain. They are often dismayed with the negative attention that the quality of U.S. grain receives. Why, they ask, with a system that works so well are there always those who downgrade U.S. products?

The Council believes the United States grain handling and marketing system works exceptionally well and is something the nation should take pride in. U.S. companies have made a tremendous investment in the nation's handling system, a system that is second to none in the

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world. Americans can provide any quality of grain, at any coast, at any time, and on time. The U.S. industry has a very direct self-interest in marketing, exports, and meeting customer needs. It is how we earn our living.

Compared to other nations, the United States is a grain supermarket. We produce and market virtually every type of grain and are in the business to be competitive sellers.

One of the few public yardsticks available to measure how well we are meeting customer needs is the number of foreign complaints received by the Federal Grain Inspection Service. According to FGIS' 1989 Annual Report to Congress, the level of foreign complaints has trended steadily downward over the last three years. In 1987, 59 complaints were registered, 35 in 1988, and 25 in 1989.

Benefits and Costs

We firmly believe that as quality improvements are judged, economic realities must be measured -- benefits versus costs. The grain industry is not adverse to change -- it is dynamic and quick to react to new opportunities. But, our decisions are made on the economics of every situation. We will support improvements where the identifiable benefits outweigh the cost.

You have heard before that the industry can provide any quality if the buyer specifies it in the contract. In fact, it is routine for some customers to write very specific qualities into their contracts. But, the vast majority do not. We do not believe, in this instance, that public policy should force actions that are uneconomic for that latter class of buyers who dominate the market. We are strongly opposed to making changes, just for the sake of change, in a system we believe works very well. We should define our products and let buyers contract for their respective needs, wants, and desires. To do otherwise is to tell the industry -- from the farmer to the exporter -- which buyers can and cannot be served in the world marketplace.

As an industry that must make a profit to survive, our members very simply cannot sell something for nothing. If handlers are required to make substantial additional investments in equipment, they must be able to recoup the costs in the marketplace or pass those costs back in the form of lower bids to farmers for their grain. Those who cannot inevitably will go out of business.

It is widely understood that the grain trade operates on razor-thin margins. It is not widely known that most companies have operated at a loss over the past two years. The industry is littered with firms which have gone out of business, merged, or consolidated.

Let me share with you an example about margins from one of our members with terminals on the Illinois River. That company typically operates on a margin of 3 cents per bushel for corn and 4 to 5 cents for soybeans on any given day. This margin, which has not changed significantly in the last 15 years, pays for the cost of unloading the grain that comes in, handling it,

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and reloading it onto barges. This margin is determined by the intense competition present in the area from the other terminals. If the bids are not competitive, the company does not buy anything from farmers. The export market that this company sells to requires number 2 quality or better. There is no additional money paid for delivering better than number 2. Legislation mandating such deliveries will be counter-productive in that it would effectively prevent sales to buyers interested in less than premium grain.

There is no fat in handling-margins. Increased costs will immediately translate into lower bids to farmers.

For the goal of increasing quality, this bill would impose very real costs on the grain handling and marketing industry. The bill would require a huge initial capital investment. The U.S. industry simply is not equipped to clean wheat on a large scale. The trade cannot afford to put it in place because it is not justified by the economics. Other organizations have estimated it would cost between \$100,000 and \$500,000 to install cleaning equipment at a country elevator. At an export facility, the cost could reach as much as \$4 million. As we contemplate requiring this type of additional investment we need to remember that country elevators are like any other small, rural business. They often have limited means and the financial requirements envisioned by this bill could be crippling to a small business.

While we can estimate in fairly realistic terms the cost of new equipment, increased operating costs, devalued inventory, and more regulation, it is not possible to put a price tag on the benefits that would be received. For the Council, those benefits seem to be largely illusory.

From our members' experience in the marketplace, we do not see significant demand for higher quality grain. Furthermore, foreign buyers have made it very clear that they would not expect to pay more for this cleaner grain, they feel it should be available at the prevailing market price.

We think it is equally unlikely that such changes would increase the United States' share in world markets. We are skeptical of statements that grain quality has caused losses in market share. It stretches reality to take such statements at face value. One country that has solicited low dockage wheat is Finland; to put its needs in context: Finland's purchases represent the equivalent of ten bushels in a semi-truck load of U.S. wheat. However, under our current grain marketing system, Finland has been able to spell out its specific wants and needs and have them met from U.S. sources -- proving that the current system does not stand in the way of any buyer accessing the quality of grain he wants. Should not the law of supply and demand apply to grain quality just as it applies to other products in the marketplace?

Price remains the dominant reason sales are made or lost. Affecting the price are a variety of factors: public policy that distorts markets; logistics or the cost of delivery; availability of supply; quality characteristics; and cleanliness. While quality may be a factor in some instances, the overriding factor is price -- being competitive in world markets.

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This debate has discussed U.S. quality compared to our major competitors -- Canada, Argentina, and Brazil. Canada cleans all of its wheat at a number of points in its handling system. That cleaning is subsidized by the government and is part of its centralized marketing board. We do not know the price for which Canada sells its grain; by comparison our system is very open and it is easy for all to see.

While Canada does clean its wheat, we have many advantages they do not. We respond to an open and competitive market. We sell all types of grain, not limited classes or varieties. And we have it available in usually ample quantities. We have an infrastructure where we can store grain to meet domestic and world demand year around; most of our competitors do not have that luxury. Most of these competitors bring their grain to market shortly after harvest and, with their respective government's help, simply sell then at the best price they can get. These are some of the reasons the United States remains a residual supplier.

Cleanliness

As we noted at the beginning of our statement, the Council believes the key issue in the Daschle/Bond bill is cleanliness. Without regard to the question of cost versus benefits, probably all involved in grain production, handling, marketing, and processing agree that a higher level of grain cleanliness is desirable. But, there is no consensus on how this goal should be achieved.

In addressing cleanliness, the specific issues that have been raised are the levels of (1) dockage and foreign material in wheat, (2) broken corn and foreign material in corn, (3) broken kernels and foreign material in sorghum, and (4) foreign material in soybeans.

S. 1977 would mandate cleaner grain by directing the Federal Grain Inspection Service (FGIS) to insure that U.S. exports of No. 3 or better have the cleanliness commonly achieved by competing exporters. The measure would also permit FGIS to prohibit blending low quality grain with high quality grain.

While much is said about the levels of dockage in U.S. wheat, we need to first understand that the main problem is appearance. Dockage does not affect the quality of the actual wheat. We should look at the way wheat is marketed to see how relevant dockage is to the entire equation. Buyers do not pay for dockage that is present in wheat. The percentage of dockage present in wheat is typically deducted from the weight of the grain when settlement is made. It should be noted that the buyer of U.S. wheat can specify any level of dockage in increments of 1/10 of one percent and the seller is required to deliver accordingly. The buyer has the freedom to buy according to his or her wants and needs.

Dockage does not pose a problem for a miller. The wheat, no matter what its dockage level, will be cleaned by the miller before further processing. Disposal of the dockage does not represent a problem because the nominal value of the dockage or screenings offsets any disposal problems. Much has been said about the foreign buyers having to pay for the trans-

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portation of dockage along with the wheat. (Dockage is a deductible, so the buyer doesn't have to pay for that in the price of the grain.) The implication is that the buyer is paying some huge amount for transporting dockage. Let us look at what is really involved. First, the average difference between dockage content in U.S. wheat shipments and those from, say, Canada, is 1/2 of 1 percent. The cost of transporting that amount, figuring a typical ocean freight charge of \$25 per ton, is 1/3 of one cent per bushel. As noted earlier, dockage and screenings typically are recovered and sold as millfeed. And if one compares the cost of transporting U.S. wheat with a slightly higher dockage content to the transportation and purchase price difference of the average 1.5 percent higher moisture content of Canadian wheat, the U.S. product offers an obviously better bargain.

Furthermore, we should not forget that dockage does not magically appear, it is not manufactured or added to the grain. Dockage originates on the farm and in fact is reduced as it moves through the United States grain handling system.

While Canada ships lower dockage wheat, the moisture level of Canadian shipments average at least 1.5 percent higher than U.S. Hard Red Winter. Canada's tight control on licensing varieties also has made their production 17 percent less efficient than ours.

For corn, the limit for broken corn and foreign material (BCFM) in No. 3 is 4 percent. While we occasionally hear from foreign customers that U.S. shipments contain a high level of BCFM, this does not seem to be the focus of attention like dockage in wheat. One reason is that with corn destined for animal feed the level of BCFM makes little difference. The majority of what is called BCFM is broken corn kernels which have the same nutritive value as whole corn.

Whether BCFM should be a single grading factor as it is now, or two separate factors, BC and FM, has been the subject of a long-standing debate within the grain marketing industry. Because of the impetus provided by the Grain Quality Workshop, this issue is now being addressed by an academic evaluation of the costs and benefits associated with redefining the grade factor BCFM.

In addition to deciding how BCFM should be determined, the level of BCFM in corn is an important issue that merits attention. Corn is the most susceptible U.S. grain to breakage in the handling process. Several factors contribute to BCFM levels. The dent varieties used in the United States are generally seen as more prone to breakage than the flint varieties used in Argentina. But the major problem is poor drying techniques.

Ironically, this became a problem when new harvesting equipment was introduced in the United States and as our policies encouraged storage rather than marketing. Thirty years ago, most U.S. corn was largely allowed to dry in the field and picked in the ear. With the advent of picker-shellers and combines, producers now harvest grain earlier, often at higher moisture levels. The grain is typically dried on the farm and, too often, it is force-dried at high temperatures over a short time-period. This causes stress cracks in corn and makes it much more susceptible to breakage when it is handled further.

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Because of breakage, corn is often cleaned as it is handled by terminals or export facilities. We believe this issue is a good example of a problem that merits further, concerted work by the entire industry. We suspect there is a positive cost/benefit ratio in developing corn less susceptible to breakage. The grain industry would benefit from not having to clean and reclean. And potentially we could ship a better product.

The tasks at hand are to focus attention on the susceptibility of corn to break, encourage development of a device to measure that susceptibility, and then expect the market to provide incentives, through discounts. This may pose some problems -- country elevators, for example, cannot bin separately a multitude of quality levels. But if the process improves the breakage susceptibility of corn in an overall sense, everyone would benefit.

As we have pointed out, technological advances in harvesting practices can create quality problems. There are two interesting contrasts to this situation. In China the technology is very rudimentary -- the corn production is virtually harvested and handled by hand. This allows them to provide shipments with exceptionally low levels of broken kernels, but the trade-off involved is not very appealing. In south Texas, the harvesting period for corn provides for natural field-drying of the crop. There, the corn is commonly harvested at 14.5 percent moisture. The crop is harvested with the same type of equipment typical in the Corn Belt and the breakage level is quite low. As a result, corn produced in south Texas seldom requires cleaning.

There has been a public debate over the level of broken kernels and foreign material (BNFM) that should be permitted in sorghum. And this debate will also provide some insight into the workings of the Grain Quality Workshop.

The BNFM limit for No. 2 sorghum is 8 percent. The Grain Sorghum Producers Association has advocated separating the factor BNFM with the limits for No. 2 of 4 percent BN and 2 percent FM, which is a reduction in the total amount.

The National Grain Trade Council has viewed this proposal with skepticism. With the current standards, roughly 90 percent of sorghum exports grade No. 2 or better. The proposal would result in only 45 percent of U.S. sorghum shipments grading No. 2 or better with no foreseeable benefit.

We see little to be gained from such a change, we are unaware of any problems this change would address. In fact, we are aware that our major competitors use the following standards: Argentina, 8 percent (5.0 percent BKN and 3.0 percent FM) for No. 2; and Australia, 13.0 percent for total BKN, FM, and total damage. Japanese users have indicated they prefer sorghum from Australia, not because of cleanliness, but because of protein content. (In fact, Japan does not even measure foreign material at destination.) The typical protein content for U.S. sorghum is about 8.8 percent, Australian sorghum is about 9.9 percent, and Argentine about 8.2 percent.

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Therefore, based on this information from end-users, the Council has argued against the sorghum proposal in the Grain Quality Workshop process. And to-date, these arguments have been compelling enough for the Workshops to not endorse such a change.

You have heard in previous testimony that the limit for foreign material in soybeans shipped from the United States should be reduced from 2 percent to 1 percent. In fact, the current FM limit has been blamed for the United States' loss in market share in Japan.

We are skeptical of statements that quality is the reason we have lost soybean market share in Japan or anywhere else. The loss in market share is more directly related to U.S. farm policy which has discouraged soybean production. U.S. acreage has declined dramatically, exports and world market share have fallen, and the domestic industry has consolidated. In a larger sense, U.S. trade policy has contributed to our loss of market share in Japan. The U.S. embargoes of grain and oilseed exports in the early-1970's led Japan to make significant investments in Brazil to diversify its source of supply. Now Japan, to protect that investment, purchases Brazil's agricultural products.

The U. S. grain standards' limit of 2 percent FM for No. 2 soybeans is often contrasted with our major competitors, Brazil and Argentina, whose limits are 1 percent. However, foreign customers often specify a lower limit in their contract.

The United States can and does ship soybeans with 1 percent maximum FM as per contract terms. But mandating such a change in the standards would result in lower bids to farmers and we doubt the change would improve our competitive position. As the soybean market development cooperator group testified, even though Brazil may be able to provide better quality, they still sell their crop at a discount to the United States. Brazil's past practice has been to simply sell its crop at whatever price level is necessary. Therefore, changing the standards likely would be largely irrelevant and would not provide an economic benefit to U.S. agriculture.

We have heard some producer representatives testify that they support tighter grain standards, more strict requirements for cleanliness, and that they are willing to bear the price adjustment that would go with such changes. The logical question that follows is, if producers are willing to pay the price, why should the grain industry care about these issues?

From past experience we have found that our farmer customers do not always share this willingness to pay the cost for tighter grain standards. We think it is likely that if the provisions of S. 1977 were implemented, a large hue and cry would result. In the meantime, the farm community would unjustly blame the grain trade for the costs resulting from the new legislation.

There also have been statements during the hearings from foreign buyers who say they can buy better quality for the same price from sources other than the United States. That may be true in selected cases, but for most cases this assertion is a gross overstatement of market dynamics. If this is the case in actuality, it would not take the market long to correct the

Avenues to Improvements

The Grain Quality Workshops were organized in response to concerns over grain quality that were raised in 1985. In calendar years 1984 and 1985 grain export volume dropped significantly from earlier record tonnage. With this drop in export volume, critics began asserting that a principal reason for the drop was the quality of U.S. grain exports. But government programs at that time had made the United States uncompetitive in world markets. As we became more price competitive under the 1985 farm bill, exports again began to improve and we saw the level of foreign grain quality complaints decline.

The Workshops brought together industry, farm groups, and academics to review quality issues and arrive at consensus recommendations for changes. In June 1986, the group issued a benchmark report, titled "Commitment to Quality," with six specific proposals for change and 13 recommendations for further study or review.

The Subcommittee has already received a list of the actions recommended by the Workshops and changes that have occurred in the FGIS regulations since that time. The Workshop recommendations, FGIS actions, and the Grain Quality Improvement Act of 1986 have resulted in more changes to the grain standards and procedures over the past five years than occurred in the previous 50 years.

The changes that were implemented are not quick-fix types of solutions. The effects of some changes have become readily apparent. But many of the changes have not become fully recognized and their benefits will be appreciated slowly over time.

It is not possible to always gain consensus in a setting like the Workshops with so many diverse groups represented. Most participants have very strong ideas about the types of changes that are necessary. But the strength of the Workshops is its diversity. Ideas may be debated and in the first instance, perhaps, rejected. But if they have merit and broad-based support, they will likely be adopted in some form after they are fully discussed.

The groups involved in the Workshop are all represented on equal footing; each group may have three representatives. Unfortunately, not all groups fully exercise this opportunity. The Workshop process is now undergoing structural change to ensure it operates efficiently and effectively. These changes will ensure that all interest groups share the leadership responsibility for the Workshops.

101ST CONGRESS
1ST SESSION

S. 1977

To amend the United States Grain Standards Act to improve the competitive position of United States grain in international and domestic markets, to facilitate the communication of quality characteristics that final buyers of grain desire, to provide certain incentives to producers of high quality grain, and to improve the quality of farmer-owned and federally owned reserve grain stocks, and for other purposes.

IN THE SENATE OF THE UNITED STATES

NOVEMBER 21 (legislative day, NOVEMBER 6), 1989

Mr. DASCHLE (for himself, Mr. BOND, Mr. KERREY, and Mr. LEAHY) introduced the following bill; which was read twice and referred to the Committee on Agriculture, Nutrition, and Forestry

A BILL

To amend the United States Grain Standards Act to improve the competitive position of United States grain in international and domestic markets, to facilitate the communication of quality characteristics that final buyers of grain desire, to provide certain incentives to producers of high quality grain, and to improve the quality of farmer-owned and federally owned reserve grain stocks, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

1 SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

2 (a) SHORT TITLE.—This Act may be cited as the
3 “Grain Quality Incentives Act of 1989”.

4 (b) TABLE OF CONTENTS.—The table of contents is as
5 follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings.
- Sec. 3. References.

TITLE I—COORDINATION AND IMPLEMENTATION OF GRAIN
QUALITY IMPROVEMENTS

- Sec. 101. Coordination of Federal activities and programs.
- Sec. 102. Benefits and costs associated with improved grain quality.
- Sec. 103. Standardizing unofficial inspections.
- Sec. 104. Report on international harmonization of standards and tests.
- Sec. 105. Sense of Congress cooperative enforcement of Federal grain purity requirements.

TITLE II—IMPROVING THE CLEANLINESS OF GRAIN EXPORTS

- Sec. 201. Improving the cleanliness of grain exports.

TITLE III—IMPROVING THE PHYSICAL SOUNDNESS AND PURITY
OF EXPORT GRAIN

- Sec. 301. Improving the physical soundness and purity of export grain.

TITLE IV—EXPORT REQUIREMENTS AND STANDARDS

- Sec. 401. Cargo loading requirements.

TITLE V—CLASSIFICATION, GRADES AND STANDARDS DESIGN
CRITERIA

- Sec. 501. Classification, grades and standards design criteria.

TITLE VI—GRAIN QUALITY RESEARCH AND TESTING

- Sec. 601. Sense of Congress concerning end-use performance research.
- Sec. 602. Sense of Congress concerning cooperation on objective testing.
- Sec. 603. Sense of Congress concerning tests for purity.

TITLE VII—VARIETY PERFORMANCE INFORMATION

- Sec. 701. Seed variety registration.
- Sec. 702. Use of variety information.
- Sec. 703. Survey of grain varieties.

TITLE VIII—PRICE SUPPORT LOAN INCENTIVES FOR CLEAN
GRAIN

- Sec. 801. Quality goals for Commodity Credit Corporation programs.

Sec. 802. Price support loan incentives for clean grain.

TITLE IX—FARMER-OWNED RESERVE QUALITY REQUIREMENTS

Sec. 901. Commodity Credit Corporation receipt standards for reserve grain.

Sec. 902. Entry quality standards for all grains.

TITLE X—QUALITY REQUIREMENTS FOR COMMODITY CREDIT CORPORATION-OWNED GRAIN

Sec. 1001. Quality requirements for Commodity Credit Corporation-owned grain.

TITLE XI—EXPORT ENHANCEMENT PROGRAM

Sec. 1101. Export enhancement program.

TITLE XII—CROP INSURANCE COVERAGE FOR LOSS OF QUALITY

Sec. 1201. Crop insurance coverage for loss of quality.

TITLE XIII—DISASTER PAYMENTS FOR LOSS OF QUALITY

Sec. 1301. Disaster payments for loss of quality.

TITLE XIV—ASSISTANCE FOR IMPROVEMENTS IN GRAIN

Sec. 1401. Authority to assist farmers and elevator operators.

Sec. 1402. Report concerning assistance for improvements in grain.

1 SEC. 2. FINDINGS.

2 Congress finds that—

3 (1) the United States grain production and mar-
4 keting industry is fundamentally sound and strong,
5 making the United States a dominant competitor in
6 world export markets;

7 (2) increasing demand for higher quality grain on
8 the part of major importers, and greater attention to
9 quality on the part of major competing exporters neces-
10 sitates that the United States improve the quality of its
11 grain exports in order to maintain a strong competitive
12 position in world grain markets;

13 (3) buyers want cleaner grain because—

1 (A) ocean freight transportation costs accrue
2 on nongrain material;

3 (B) duties must often be paid on nongrain
4 material just as such duties are paid on grain
5 imports;

6 (C) there may not be markets for screenings;

7 (D) environmental restrictions can complicate
8 and increase the cost of unloading activities and
9 disposal of screenings;

10 (E) some buyers lack cleaning capabilities;
11 and

12 (F) cleaner grain maintains its condition
13 better during storage and shipping;

14 (4) increased automation and continuous flow
15 processing and manufacturing technology necessitate
16 greater consistency of performance;

17 (5) increased knowledge and awareness of the
18 composition and intrinsic characteristics of grain that
19 have value to end-users are making buyers more alert
20 to quality differences among suppliers; ———

21 (6) competing major grain exporters are recog-
22 nized as providing high quality grain as a result of a
23 combination of rigid controls on variety release or man-
24 datory handling and storage requirements, or central-
25 ized control over exports;

1 (7) neither commercial markets nor Federal price
2 support programs effectively communicate and reward
3 end-use quality characteristics of grain;

4 (8) the key to improving grain quality in the
5 United States depends on—

6 (A) the increased knowledge of end-user per-
7 formance characteristics by plant breeders, pro-
8 ducers, and marketers;

9 (B) the modification of grain grades and
10 standards to properly reflect characteristics impor-
11 tant to intermediate and end-users;

12 (C) improvements in the cleanliness and sani-
13 tary condition of United States grain; and

14 (D) quality based incentives through Federal
15 government programs and the marketplace; and

16 (9) the grain industry has worked diligently
17 through the advisory council to the Federal Grain In-
18 spection Service and through a long series of unofficial
19 grain quality workshop meetings to address grain qual-
20 ity issues, and such efforts are applauded and encour-
21 aged to continue as a method of assisting the Secretary
22 of Agriculture in implementing legislation that will
23 improve the quality of United States grain and improve
24 the competitiveness of the United States in
25 international trade.

1 SEC. 3. REFERENCES.

2 Whenever in this Act an amendment or repeal is ex-
3 pressed in terms of an amendment to, or repeal of, a section
4 or other provision, the reference shall be considered to be
5 made to a section or other provision of the United States
6 Grain Standards Act (7 U.S.C. 71 et seq.).

7 **TITLE I—COORDINATION AND IM-**
8 **PLEMENTATION OF GRAIN**
9 **QUALITY IMPROVEMENTS**

10 SEC. 101. COORDINATION OF FEDERAL ACTIVITIES AND
11 PROGRAMS.

12 The Act is amended by adding at the end thereof the
13 following new section:

14 "SEC. 22. GRAIN QUALITY COORDINATOR.

15 "(a) APPOINTMENT.—The Secretary shall designate an
16 individual to serve as the Grain Quality Coordinator (herein-
17 after referred to as the 'Coordinator') to carry out the duties
18 described in subsection (b).

19 "(b) DUTIES.—The Coordinator shall be responsible
20 for—

21 "(1) monitoring the activities of the Department
22 of Agriculture with respect to domestic grain to insure
23 that such activities are consistent with the provisions
24 of this Act, (and other agricultural Acts) as such Acts
25 relate to improving grain quality;

1 “(2) serving as the Federal government coordina-
2 tor with respect to activities effecting domestic grain,
3 to insure that such activities are consistent with the
4 goal of improving grain quality;

5 “(3) preparing and submitting, to the Committee
6 on Agriculture of the House of Representatives and the
7 Committee on Agriculture, Nutrition, and Forestry of
8 the Senate, reports concerning—

9 “(A) actions undertaken by the Department
10 of Agriculture—

11 “(i) to improve the quality of domestic
12 grain; and

13 “(ii) that are inconsistent with the goal
14 of improving grain quality;

15 “(B) conditions in the production and mar-
16 keting sectors that discourage the making of im-
17 provements in grain quality; and

18 “(C) recommendations for legislative or regu-
19 latory changes that may be made to assist in the
20 correction of problems with domestic grain.”.

21 SEC. 102. BENEFITS AND COSTS ASSOCIATED WITH IMPROVED
22 GRAIN QUALITY.

23 Not later than 180 days after the date of enactment of
24 this Act, the Secretary of Agriculture shall prepare and
25 submit, to the Committee on Agriculture of the House of -

1 Representatives and the Committee on Agriculture, Nutri-
2 tion, and Forestry of the Senate, a report that shall
3 contain—

4 (1) the results of an economic analysis concerning
5 the costs and benefits, including the anticipated distri-
6 bution of such costs and benefits, associated with the
7 improvement in the quality of United States grain; and

8 (2) an analysis of the extent to which the im-
9 provement in the quality of grain exported from the
10 United States can be expected to affect the competitive
11 position of the United States in world grain markets.

12 SEC. 103. STANDARDIZING UNOFFICIAL INSPECTIONS.

13 (a) IN GENERAL.—The Act is amended by inserting
14 after section 7B (7 U.S.C. 79b) the following new section:

15 "SEC. 7C. STANDARDIZING UNOFFICIAL INSPECTIONS.

16 "(a) GENERAL MONITORING PROCEDURES.—To insure
17 that producers are treated uniformly in delivering grain, and
18 to facilitate the grain price supports program under the Agri-
19 cultural Act of 1949 and grain quality marketing incentives
20 under this or other Acts, the Administrator shall develop pro-
21 cedures to be used in the conducting of unofficial inspections
22 of grain by handlers where such inspections result in price
23 adjustments for such grain, and shall develop national guide-
24 lines with respect to such inspections.

1 “(b) TESTING PROCEDURES.—To insure the uniformity
2 of tests and testing equipment used in unofficial inspections
3 for the application of grain standards under subsection (a),
4 the Administrator shall develop procedures for approving the
5 testing instruments, techniques, calibration of equipment, and
6 procedures used in such unofficial inspections.”.

7 (b) UNITED STATES WAREHOUSE ACT.—Section 15 of
8 the United States Warehouse Act (7 U.S.C. 256) is
9 amended—

10 (1) by inserting “(a) IN GENERAL.—” before
11 “Any fungible”; and

12 (2) by adding at the end thereof the following new
13 subsection:

14 “(b) UNOFFICIAL INSPECTIONS.—Notwithstanding any
15 other provision of law, in conducting unofficial inspections, a
16 licensed warehouse shall use grain sampling procedures, test-
17 ing techniques, and standards approved by the Federal Grain
18 Inspection Service.”.

19 SEC. 104. REPORT ON INTERNATIONAL HARMONIZATION OF
20 STANDARDS AND TESTS.

21 (a) IN GENERAL.—Not later than December 31, 1992,
22 the Secretary of Agriculture shall prepare and submit to the
23 Committee on Agriculture of the House of Representatives
24 and the Committee on Agriculture, Nutrition, and Forestry of
25 the Senate, a report, in accordance with subsection (b), con-

cerning the harmonization of United States grain standards, tests, and testing equipment with those of foreign nations.

(b) CONTENTS.—The report submitted under subsection (a) shall contain—

(1) an evaluation of the grain standards, tests, and testing equipment of major grain trading nations;

(2) recommendations concerning the practicality and desirability, considering benefits and costs to the United States, of achieving a harmonization of grain standards, tests, and equipment among nations in order to facilitate trade and improve the competitive position of the United States; and

(3) any other information that the Secretary of Agriculture determines necessary.

SEC. 105. SENSE OF CONGRESS COOPERATIVE ENFORCEMENT
OF FEDERAL GRAIN PURITY REQUIREMENTS.

(a) FINDINGS.—Congress finds that the laws and regulations related to the purity and safety of grain that are administered by the Food and Drug Administration and the Environmental Protection Agency, serve to insure the integrity of the United States as a supplier of wholesome grain.

(b) SENSE OF CONGRESS.—It is the sense of Congress that Federal agencies that are responsible for enforcing the laws and regulations relating to the quality, purity, and safety of grain marketed both domestically and in foreign na-

1 tions, should seek assistance from and cooperate with the
2 Federal Grain Inspection Service in enforcing such laws and
3 regulations.

4 **TITLE II—IMPROVING THE**
5 **CLEANLINESS OF GRAIN EX-**
6 **PORTS**

7 **SEC. 201. IMPROVING THE CLEANLINESS OF GRAIN EXPORTS.**

8 The Act is amended by inserting after section 4 (7
9 U.S.C. 76) the following new section:

10 **“SEC. 4A. IMPROVING THE CLEANLINESS OF GRAIN EXPORTS.**

11 **“(a) CLEANLINESS.—**

12 **“(1) IN GENERAL.—**Exporters of high quality
13 grain from the United States shall meet the standards
14 of cleanliness commonly achieved by competing
15 exporters.

16 **“(2) REGULATIONS.—**Not later than 120 days
17 after the date of enactment of this section, the Secre-
18 tary, acting through the Administrator, shall promul-
19 gate regulations to carry out paragraph (1).

20 **“(b) REMOVAL OF FOREIGN MATERIAL.—**Not later
21 than 5 years after the date of enactment of this section, the
22 Administrator shall enforce limits on easily removable non-
23 grain material in grain for grades number 1, 2, and 3 that
24 shall be comparable to levels of cleanliness met by major

1 competing grain exporting nations as determined by the
2 Administrator.

3 “(c) PHASE IN PERIOD.—The Secretary, acting
4 through the Administrator, shall phase in the requirements of
5 this section—

6 “(1) in the case of subsection (a), by incrementally
7 increasing the level of cleanliness required compared to
8 foreign nations; and

9 “(2) in the case of subsection (b), by incrementally
10 decreasing the limit on nongrain material permitted in
11 shipments of grades number 1, 2, and 3 grain.”.

12 **TITLE III—IMPROVING THE PHYS-**
13 **ICAL SOUNDNESS AND PURITY**
14 **OF EXPORT GRAIN**

15 **SEC. 301. IMPROVING THE PHYSICAL SOUNDNESS AND**
16 **PURITY OF EXPORT GRAIN.**

17 The Act (as amended by section 101) is further amended
18 by adding at the end thereof the following new section:

19 **“SEC. 23. IMPROVING THE PHYSICAL SOUNDNESS AND**
20 **PURITY OF EXPORT GRAIN.**

21 “(a) **QUALITY OF EXPORTED GRAIN.**—The Adminis-
22 trator shall establish procedures that ensure the receipt, by a
23 foreign purchaser that specifies a certain grade of grain in a
24 grain purchase contract, of grain under such contract that is
25 suitably sound and pure considering the contract grade speci-

1 fication, the end-use performance goals of the purchaser, and
2 the condition of comparable grain being supplied by other
3 grain exporting nations.

4 “(b) PROCEDURES.—

5 “(1) DETERMINATION.—In carrying out subsec-
6 tion (a), the Administrator shall make a determination
7 establishing the adverse conditions that shall make
8 grain unacceptable for its normal intended uses in for-
9 eign markets or for its classification in a certain grade.

10 “(2) EVALUATION.—In establishing procedures
11 for making the determination under paragraph (1), the
12 Administrator shall evaluate the grade determining fac-
13 tors and factor limits in existence on the date of enact-
14 ment of this section, to determine the suitability of the
15 use of such factors as contract specifications for end-
16 users. Such evaluation shall include an assessment of
17 whether changes in factors and factor limits by them-
18 selves, or in combination with a prohibition of blending,
19 will achieve the requirements of subsection (a). Such
20 evaluation shall be completed not later than Decem-
21 ber 31, 1991.

22 “(3) ESTABLISHMENT OF FACTORS.—After the
23 completion of the evaluation conducted under para-
24 graph (2), the Administrator shall specify grade-deter-
25 mining factors and limits that shall be applicable under

1 this section to grain that is exported. Such factors shall
2 permit grain that is exported to be classified in a
3 manner that is comparable to grains of other countries
4 that is of similar quality and performance standards.
5 The Administrator may phase in the factor limits appli-
6 cable under this section but such limits shall be fully
7 implemented not later than 5 years after the date of
8 enactment of this section.

9 “(4) BLENDING.—

10 “(A) IN GENERAL.—The Administrator may
11 prohibit blending of low quality grain with grain
12 of other qualities to market such low quality grain
13 as that of a higher quality if the Administrator de-
14 termines that such action is necessary or practical
15 to ensure that grains marketed as grades 1, 2, or
16 3 meets the factor limits established under this
17 subsection. High quality grain may be blended
18 with a lower quality grain if such grain will be
19 marketed as such a lower quality. No prohibition
20 on blending shall be construed to restrict the mar-
21 keting of such low quality grain.

22 “(B) IMPLEMENTATION.—If the Administra-
23 tor prohibits blending under this subsection, the
24 Administrator shall promulgate such regulations
25 as are necessary to carry out this section.”.

1 **TITLE IV—EXPORT REQUIRE-**
2 **MENTS AND STANDARDS**

3 **SEC. 401. CARGO LOADING REQUIREMENTS.**

4 Section 7 (7 U.S.C. 79) is amended by adding at the end
5 thereof the following new subsection:

6 “(k) Except as otherwise authorized by the Administra-
7 tor, on the request of a purchaser, all grain that is officially
8 inspected and officially weighed for export shall be loaded
9 aboard the final carrier according to a plan that statistically
10 assures fairness by favoring neither the buyer nor the seller
11 in meeting the requirements specified by the delivery con-
12 tract.”.

13 **TITLE V—CLASSIFICATION,**
14 **GRADES AND STANDARDS**
15 **DESIGN CRITERIA**

16 **SEC. 501. CLASSIFICATION, GRADES AND STANDARDS DESIGN**
17 **CRITERIA.**

18 Section 4 (7 U.S.C. 76) is amended by adding at the end
19 thereof the following new subsection:

20 “(d)(1)(A) The Administrator shall develop and imple-
21 ment a classification, grades and standards design frame-
22 work, to structure grain standards established under this sec-
23 tion. Such framework shall be designed to make it possible to
24 modify standards to accommodate scientific advances in test-

1 ing and new knowledge concerning the factors influencing
2 storability and end-use performance of grain.

3 “(B) In developing the framework under paragraph (1),
4 the Administrator shall develop a grain classification and
5 grading system and establish factor limits for each grain,
6 within the constraints of existing testing technology, known
7 factors influencing end-use characteristics and storability, and
8 practical handling and transportation technology.

9 “(C) Not later than December 31, 1991, the Adminis-
10 trator shall develop a schedule for implementing the classifi-
11 cation, grades, and standards under subparagraph (B), and
12 such schedule shall be submitted to the Committee on Agri-
13 culture of the House of Representatives and the Committee
14 on Agriculture, Nutrition, and Forestry of the Senate.

15 “(D) Implementation of the classes, grades and stand-
16 ards proposed under this paragraph shall begin immediately
17 on completion of the report required under subparagraph (C).

18 “(2) In establishing standards under paragraph (1), the
19 Administrator shall adopt an economic value based system of
20 class-determining factors, grade-determining factors, non-
21 grade-determining factors, and optional factors that—

22 “(A) define uniform and descriptive terms to facili-
23 tate trade;

1 “(B) provide final and intermediate users with suf-
2 ficient information to enable such users to determine
3 the quality of grain for marketing and end use; and

4 “(C) enables the market to establish quality im-
5 provement incentives for grain.

6 “(3) Within the system referred to in paragraph (2)—

7 “(A) class-determining factors shall separate grain
8 into categories based on differing major end-uses of
9 such grain;

10 “(B) grade-determining factors shall—

11 “(i) relate to the physical soundness and
12 purity of the grain (that affect the storability and
13 end-use propensities of the grain) and the effect of
14 such on the economic value of such grain to the
15 end user, and

16 “(ii) be separated into three grade categories
17 that differentiate between descending levels of the
18 physical soundness and purity of the grain, that
19 are generally acceptable to a majority of major in-
20 termediate and end-users, as determined by the
21 Secretary;

22 “(C) nongrade-determining factors shall relate to
23 the physical condition, composition and intrinsic char-
24 acteristics of the grain which are important to the
25 major end and intermediate users;

1 “(D) optional factors shall relate to characteristics
2 or conditions of the grain that are important to a limit-
3 ed number of final and intermediate users, or that
4 relate to adverse conditions that arise only occasionally
5 or in isolated locations; and

6 “(E) grain shall only be tested and the results re-
7 ported for conditions relating to grade-determining and
8 nongrade-determining factors in official inspections, and
9 other factors determined in inspections shall not be re-
10 ported except when requested or when the Administra-
11 tor determines the conditions exists that warrant the
12 routine testing of optional factors.

13 “(4) The Administrator shall establish a separate grade
14 designation for grain that includes damage levels, impurities,
15 or other conditions that make such grain generally unsuitable
16 for the normal intended uses of such grain.”.

17 **TITLE VI—GRAIN QUALITY**
18 **RESEARCH AND TESTING**

19 SEC. 601. SENSE OF CONGRESS CONCERNING END-USE PER-
20 **FORMANCE RESEARCH.**

21 (a) FINDINGS.—Congress finds that—

22 (1) research concerning the end-use performance
23 of grain conducted by the Agricultural Research Serv-
24 ice and land-grant universities is critical to improving

1 the quality and competitiveness of United States grains
2 in domestic and world markets;

3 (2) the work done by the Agricultural Research
4 Service wheat quality laboratories has proven valuable
5 to improving the understanding of individuals concern-
6 ing the relationships between the physical and chemical
7 properties of wheat and the performance of such in
8 milling and baking; and

9 (3) research conducted by the Agricultural Re-
10 search Service and at land-grant universities concern-
11 ing the composition of corn and soybean varieties has
12 proven valuable to feed and food users.

13 (b) SENSE OF CONGRESS.—It is the sense of Congress
14 that the Secretary of Agriculture, and in particular the Agri-
15 cultural Research Service and land-grant universities, should
16 examine their financial priorities and place increased empha-
17 sis on grain variety evaluation and the development of objec-
18 tive tests for the end-use properties of grains.

19 SEC. 602. SENSE OF CONGRESS CONCERNING COOPERATION
20 IN OBJECTIVE TESTING.

21 (a) FINDING.—Congress finds that the close cooperative
22 relationship that exists between the Federal Grain Inspection
23 Service, the Agricultural Research Service, and land grant
24 universities has proven highly beneficial in identifying grain

1 quality-related characteristics, developing tests, and design-
2 ing grain standards.

3 (b) SENSE OF CONGRESS.—It is the sense of Congress
4 that the cooperative efforts described in subsection (a), in-
5 cluding the sharing of funds and personnel, should be strongly
6 encouraged, and that the Federal Grain Inspection Service
7 should continue to utilize the research capabilities of the Ag-
8 ricultural Research Service and the land-grant universities in
9 such efforts.

10 SEC. 603. SENSE OF CONGRESS CONCERNING TESTS FOR
11 PURITY.

12 (a) FINDING.—Congress finds that consumers, both
13 internationally and domestically, are aware of, and concerned
14 with, the purity of their food supply.

15 (b) SENSE OF CONGRESS.—It is the sense of Congress
16 that in order to assure buyers of the purity of United States
17 grain, the Federal Grain Inspection Service should, as soon
18 as practical, implement tests for mycotoxins and pesticide
19 residues and incorporate the limits on the presence of such
20 impurities in grain, as established by the Food and Drug Ad-
21 ministration and the Environmental Protection Agency, into
22 the official grain grade classification system established under
23 the United States Grain Standards Act (7 U.S.C. 71 et seq.).

**TITLE VII—VARIETY
PERFORMANCE INFORMATION**

SEC. 701. SEED VARIETY REGISTRATION.

Section 201(a) of the Federal Seed Act (7 U.S.C. 1571(a)) is amended—

(1) in paragraph (10), by striking out the period and inserting in lieu thereof “; and”; and

(2) by adding at the end thereof the following new paragraph:

“(11) Specifications of certain variety and quality performance characteristics of the seeds, as approved by the Secretary, including those that are—

“(A) agronomic in nature and most important to producers; and

“(B) physical, compositional, and intrinsic in nature and most important to the end-users.”.

SEC. 702. USE OF VARIETY INFORMATION.

Section 7 (7 U.S.C. 79) (as amended by section 601) is further amended by adding at the end thereof the following new subsection:

“(l) If the variety name of a grain is required by a warehouse for proper classification or separation of grain by a warehouse, the warehouse receipt for deliveries of such grain from producers shall state the name of the grain variety. If producers do not know or provide the variety of the grain

1 being delivered the designation for classification purposes
2 may be stated as 'unknown'. If several varieties of grain are
3 interplanted or harvested together the designation for classifi-
4 cation purposes may be stated as 'mixed'."

5 **SEC. 703. SURVEY OF GRAIN VARIETIES.**

6 The National Agricultural Statistics Service shall peri-
7 odically compile, prepare and submit, to the Secretary of Ag-
8 riculture and to the Committee on Agriculture of the House
9 of Representatives and the Committee on Agriculture, Nutri-
10 tion, and Forestry of the Senate, a report that contains data
11 concerning the varieties of major grains produced in the
12 United States. Such report shall provide data relating plant-
13 ings of grains to agronomic performance and end-use proper-
14 ties of the varieties of such grain.

15 **TITLE VIII—PRICE SUPPORT**
16 **LOAN INCENTIVES FOR CLEAN**
17 **GRAIN**

18 **SEC. 801. QUALITY GOALS FOR COMMODITY CREDIT CORPO-**
19 **RATION PROGRAMS.**

20 The Secretary of Agriculture, in administering the pro-
21 grams under the Agricultural Act of 1949, or in administer-
22 ing any other agricultural programs through the Commodity
23 Credit Corporation, shall give consideration to the direct and
24 indirect impact that such programs have on the quality of
25 crops and livestock produced in the United States.

1 SEC. 802. PRICE SUPPORT LOAN INCENTIVES FOR CLEAN
2 GRAIN.

3 It is the sense of Congress that as part of the price
4 support and production adjustment programs established for
5 1991 and subsequent crop years—

6 (1) grain price support loans should reflect quality
7 characteristics through a schedule of premiums;

8 (2) a special loan premium should be established
9 for clean grain at a level that will sufficiently reward
10 producers to encourage the marketing of cleaner grain;

11 (3)(A) grain pledged as collateral for a price sup-
12 port loan from the Commodity Credit Corporation
13 should be inspected to determine the condition and
14 quality of the grain relative to the schedule of premi-
15 ums that apply to such loans; and

16 (B) grain pledged as collateral for a price support
17 loan that has not been inspected for quality should be
18 ineligible for quality premiums; and

19 (4)(A) any grain forfeited to the Commodity
20 Credit Corporation under a nonrecourse loan should be
21 inspected according to approved procedures to deter-
22 mine the condition and quality of the grain; and

23 (B) an adjustment should be made to the loan pro-
24 ceeds for changes in condition and quality of the grain.

1 **TITLE IX—FARMER-OWNED RE-**
2 **SERVE QUALITY REQUIRE-**
3 **MENTS**

4 **SEC. 901. COMMODITY CREDIT CORPORATION RECEIVAL**
5 **STANDARDS FOR RESERVE GRAIN.**

6 Section 110(j) of the Agricultural Act of 1949 (7 U.S.C.
7 1445e(j)) is amended—

8 (1) by inserting “(1)” after the subsection designa-
9 tion; and

10 (2) by adding at the end thereof the following new
11 paragraph:

12 “(2) Any grain stored under the producer storage pro-
13 gram that is forfeited by the producer to the Commodity
14 Credit Corporation shall be equal to or exceed the quality of
15 the grain that was pledged by such producer as collateral in
16 order to fully satisfy the original storage contract. The Secre-
17 tary shall impose discounts for any deterioration in such qual-
18 ity. Such discounts shall be substantial enough to discourage
19 the forfeiture of low quality grain.”.

20 **SEC. 902. ENTRY QUALITY STANDARDS FOR ALL GRAINS.**

21 Section 110 of the Agricultural Act of 1949 (7 U.S.C.
22 1445e) is amended by adding at the end thereof the following
23 new subsection:

24 “(k) In announcing the terms and conditions of the pro-
25 ducer storage program under subsection (c)(1), the Secretary

1 shall set standards concerning the quality of grain that shall
2 be allowed to be stored under the program, and such stand-
3 ards shall ensure that only high quality clean grain shall be
4 stored under such program. The Secretary shall establish
5 grain maintenance and stock rotation requirements to insure
6 that quality is maintained for the duration of the storage
7 period.”.

8 **TITLE X—QUALITY REQUIRE-**
9 **MENTS FOR COMMODITY**
10 **CREDIT CORPORATION OWNED**
11 **GRAIN**

12 **SEC. 1001. QUALITY REQUIREMENTS FOR COMMODITY CREDIT**
13 **CORPORATION OWNED GRAIN.**

14 The Act (7 U.S.C. 71 et seq) (as amended by sections
15 101, and 301) is further amended by adding at the end there-
16 of the following new section:

17 **“SEC. 24. QUALITY REQUIREMENTS FOR COMMODITY CREDIT**
18 **CORPORATION OWNED GRAIN.**

19 **“(a) ESTABLISHMENT OF MINIMUM STANDARDS.—**
20 Notwithstanding any other provision of law, the Secretary,
21 acting through the Administrator, shall establish minimum
22 quality standards that shall apply to grain that is to be stored
23 by the Commodity Credit Corporation for long periods of
24 time. In establishing such standards, the Secretary shall take
25 into consideration factors related to the storability of grain.

1 “(b) INSPECTION OF GRAIN ACQUISITIONS.—The
2 Commodity Credit Corporation shall establish and implement
3 a procedure to monitor the condition of grain stored by such
4 Corporation to insure that the quality of such grain is
5 maintained.

6 “(c) DISPOSAL OF OFF-QUALITY GRAIN.—Grain that
7 is acquired by the Commodity Credit Corporation that does
8 not meet the minimum quality grade standards established
9 under subsection (a), or grain stored by such Corporation that
10 fails to meet such standards at any time during storage, shall
11 be marketed in such a manner as to insure that it is not
12 blended into other grain intended to be marketed as meeting
13 number 1, 2, or 3 grade standards.”.

14 **TITLE XI—EXPORT**
15 **ENHANCEMENT PROGRAM**

16 SEC. 1101. EXPORT ENHANCEMENT PROGRAM.

17 Section 1127 of the Food Security Act of 1985 (7
18 U.S.C. 1736v) is amended—

19 (1) in subsection (b)—

20 (A) by striking out “and” at the end of para-
21 graph (4);

22 (B) by striking out the period at the end of
23 paragraph (5) and inserting in lieu thereof
24 “; and”; and

1 (C) by adding at the end thereof the follow-
2 ing new paragraph:

3 “(6) shall authorize the drafting of export con-
4 tracts in a manner that would facilitate the export of
5 high quality grain, as determined under standards es-
6 tablished by the Administrator of the Federal Grain In-
7 spection Service under the United States Grain Stand-
8 ards Act (7 U.S.C. 71 et seq.), that may contain re-
9 quirements for the payment of bonuses under this sec-
10 tion to exporters.”.

11 (2) in subsection (h), by striking out “1990” and
12 inserting in lieu thereof “1995”.

13 **TITLE XII—CROP INSURANCE**
14 **COVERAGE FOR LOSS OF**
15 **QUALITY**

16 **SEC. 1201. CROP INSURANCE- COVERAGE FOR LOSS OF**
17 **QUALITY.**

18 Section 508(a) of the Federal Crop Insurance Act (7
19 U.S.C. 1508(a)) is amended—

20 (1) in the second sentence, by inserting “, or in
21 the case of grains the loss of the quality of such com-
22 modity,” after “insured commodity”; and

23 (2) by inserting after the eighth sentence the fol-
24 lowing new sentence: “Any insurance offered to grain
25 producers shall make available protection against loss

1 in the quality of the grain, as determined by the Cor-
2 poration in consultation with the Administrator of the
3 Federal Grain Inspection Service, if such grain is of
4 sufficiently poor quality, as a result of any unavoidable
5 causes, to be classified by the Administrator as unac-
6 ceptable as grade 3 grain.”.

7 **TITLE XIII—DISASTER PAYMENTS**
8 **FOR LOSS OF QUALITY**

9 **SEC. 1301. DISASTER PAYMENTS FOR LOSS OF QUALITY.**

10 Section 105(a) of the Disaster Assistance Act of 1989
11 (Public Law 101-82; 103 Stat. 572) is amended by adding at
12 the end thereof the following new sentence: “Such additional
13 payments shall include payment for the loss of the quality of
14 grain if such crop of grain is damaged or contaminated in
15 excess of factor limitations established for grade 3 grain
16 under the United States Grain Standards Act.”.

17 **TITLE XIV—ASSISTANCE FOR IM-**
18 **PROVEMENTS IN GRAIN QUAL-**
19 **ITY**

20 **SEC. 1401. AUTHORITY TO ASSIST FARMERS AND ELEVATOR**
21 **OPERATORS.**

22 The Secretary of Agriculture may provide financial as-
23 sistance (including cost sharing, loans and grants) and techni-
24 cal assistance to grain producers and elevator operators to
25 assist such producers and operators in installing or improving

1 grain cleaning, drying or storage equipment. Financial assist-
2 ance may be provided by or through the Commodity Credit
3 Corporation or other agency administered by the Department
4 of Agriculture that provides cost sharing, loans, or grants.

5 SEC. 1402. REPORT CONCERNING ASSISTANCE FOR IMPROVE-
6 MENTS IN GRAIN.

7 Not later than June 30, 1991, the Secretary of Agricul-
8 ture shall prepare and submit, to the Committee on Agricul-
9 ture of the House of Representatives and the Committee on
10 Agriculture, Nutrition, and Forestry of the Senate, a report,
11 together with recommendations on program implementation,
12 that shall contain the results of an investigation conducted by
13 such Secretary concerning the alternative forms of financial
14 assistance (including cost sharing, loans, and grants) and
15 technical assistance that may be provided to grain producers
16 and operators of grain elevators to assist such producers and
17 operators in installing or improving grain cleaning, drying, or
18 storage equipment to improve the cleanliness and quality of
19 grain produced in the United States.



PREPARATION FOR THE 1990 FARM BILL

Enhancing Grain Quality

THURSDAY, FEBRUARY 22, 1990

U.S. SENATE, SUBCOMMITTEE ON AGRICULTURAL RESEARCH AND GENERAL LEGISLATION OF THE COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY,

Washington, DC.

The subcommittee met, pursuant to notice, at 9:30 a.m., in room SR-332, Russell Senate Office Building, Hon. Thomas A. Daschle (chairman of the subcommittee) presiding.

Present or submitting a statement: Senators Daschle, Boschwitz, and Bond.

STATEMENT OF HON. THOMAS A. DASCHLE, A U.S. SENATOR FROM SOUTH DAKOTA

Senator DASCHLE. The hearing will come to order. I want to welcome everybody here this morning. This is the second hearing on the grain quality issue. It is the full intention of Senator Bond and myself to utilize the findings of these hearings in redrafting a grain quality bill, which will replace S. 1977 when it is introduced in the very near future. The value of these hearings to the subcommittee has been substantial. We hope there is value also to the grain industry as we together investigate grain quality problems and possible solutions.

I welcome the witnesses, all of whom I know to have come from out of town. One of the witnesses is from South Dakota. I thank you all for coming. I will postpone the individual introductions until each panel of witnesses takes its turn at the witness table. We have a rather long slate of witnesses, something that I generally do not care to have at hearings, but in the interest of getting as broad a participation in these hearings as possible, and certainly as much advice and direction from those who are directly affected and interested, we wanted to accommodate as many people as possible.

So I will end my remarks here, and we will proceed straight to the witnesses. This morning's witnesses are divided into three panels. My goal in assembling each panel is to bring together as many different views as possible. I have arbitrarily labeled each panel with a title that capsulizes some of the concerns and questions we have. I do not expect these titles will constrain the comments, or for that matter the questions.

The prepared statement of Senator Bond will be inserted in the record at this point.

[The prepared statement of Senator Bond follows:]

PREPARED STATEMENT OF HON. CHRISTOPHER S. "KIT" BOND, A U.S. SENATOR FROM MISSOURI

Mr. Chairman, it is a pleasure to be able to join you this morning. Although I had to excuse myself from the last hearing due to the clean air bill negotiations, I am pleased to report that progress is being made in that area. Having said that, I am looking forward to another quality issue—not the quality of our air but the quality of our grain.

After reviewing the testimony, and discussing it with my staff, it appears the last hearing was quite productive. We were certainly honored to receive testimony from representatives of the European Community and the Soviet Union. I might add that I was also very impressed with the testimony delivered by a fellow Missourian, my friend Gary Riedel.

In reviewing the testimony, I learned several interesting points:

- Mr. Ageev stated that he receives 10 times as many complaints from his users about the quality of U.S. grain compared to other nations. Furthermore, Mr. Ageev stated that the United States is in danger of losing market share as the Soviet Union reduces their imports.

- Mr. Shestopalov spoke of serious quarantine weed seed problems. It is doubtful we would tolerate this if we were importing grain.

- Mr. Vervaeke was quite clear in explaining why quality problems with U.S. soybeans make them uncompetitive with beans from Brazil. His figures for foreign material alone—a 1 percent increase in FM equates to a .2 percent loss in oil and .4 percent in meal—pose interesting questions. Most alarming in Mr. Vervaeke's testimony was his statement that "there are soybeans available on the world market that meet the required quality specifications and for which we pay a *normal* market price."

- In light of Mr. Vervaeke's remarks, I was very pleased with the testimony of the American Soybean Association. Gary was very eloquent in his description of the frustrations he feels as a soybean grower; first, in competing against South American beans with a higher protein content; and second, seeing his beans delivered to the elevator at .6 or .7 percent FM and having overseas buyers complain about 2.3 percent FM—primarily Yellow corn.

- Mr. McCoy informed the committee that grain is traded on the basis of contracts between buyers and sellers. I agree that in a perfect system, quality matters would be handled as contract matters. But those contracts, and the entire marketing system, are shaped largely by official grades and standards.

- Mr. Wilson reiterated some the problems associated with high levels of dockage in U.S. wheat exports. Assistant Secretary Smith, while somewhat vague about USDA's grain quality plans, did agree with the fundamental point that the United States must meet the quality standards established by our competitors.

Mr. Chairman, during last week's recess I traveled throughout Missouri talking with producers about the upcoming farm bill. As we talked through the issues it became clear that producers feel we should put greater emphasis on grain quality. They expressed frustration that current programs emphasize quantity over quality.

Some have said that just as though you won't hear a corn farmer admit that he makes more money on wheat, you won't hear a grain farmer admit that his crop isn't top quality. But I haven't found this to be the case. My farmers do produce quality grain, however they recognize that improvements are still possible.

I was pleased to learn that Missouri producers recognize the importance of world markets and are willing to meet the challenge to remain competitive. Yet movement toward a more quality-oriented system, a system which better reflects end-use characteristics, must be passed through to producers. Those that produce high quality grain should be compensated for high quality grain.

I spoke with producers who are concerned that they will simply bear the brunt of any new grain quality legislation. This was never the intent. If our current system is to evolve into one which better reflects the needs of end-users, changes are necessary from the plant breeder to the export terminal.

After speaking with many Missourians about grain quality, I remain committed to pursuing legislation. Senator Daschle and I have said all along that this was a discussion bill. I have been very pleased with the comments and suggestions provided to us in recent weeks and following this hearing we will be looking at modifications to improve the bill.

The evidence indicates that we can make improvements in grain quality. Furthermore, it is apparent that improving quality is not simply an export issue but also an

important domestic issue. Our millers and bakers rely on high-quality grain—this is something we need to keep in mind as we proceed.

We have made progress in recent years, however, complacency is something we should all reject. As Winston Churchill once said, "Unless the intellect of a nation keeps abreast of all material improvements, the society in which that occurs is no longer progressing."

Mr. Chairman, I appreciate your efforts as we proceed with this legislation and commend you for another fine lineup on witnesses. I look forward to hearing from them.

Senator DASCHLE. The first panel is entitled Growers and Handlers: Do They Care and Can They Improve? And the second panel is entitled Grain Cleanliness: Are There Benefits? The third panel is entitled Performance Consistency: Does the Quality Matter to Domestic Users?

The first panel Do They Care and Can They Improve is invited to come to the table now. Ron Swanson of the National Corn Growers Association; Arvid Hawk and Alex Curtis, the National Grain and Feed Association; Erv Friehe, the Nebraska Wheat Board; and Dr. Charles Hurburgh from Iowa State University.

Members of the first panel, we are pleased to have you here. I know a number of other Senators are expected to arrive shortly, but in the interest of time and making sure that we cover all the ground we are scheduled to cover this morning, let me begin by again thanking you for coming, welcoming you to the committee, and inviting you to proceed as you see fit. I must also indicate that as a result of the number of witnesses we have and wanting to make sure that we leave adequate time for questions, we will go by the 5-minute rule. And I will try to be as tactful as I can in cutting all of our witnesses off at the end of 5 minutes.

When you see the red light, your time has expired. Let us begin with Ron Swanson, the vice president of research for the National Corn Growers Association.

STATEMENT OF RON SWANSON, VICE PRESIDENT FOR RESEARCH, NATIONAL CORN GROWERS ASSOCIATION, GALT, IA

Mr. SWANSON. Thank you, Mr. Chairman, for continuing these hearings into the quality of grain produced in this Nation. I am pleased to speak today on behalf of the more than 23,000 members of the National Corn Growers Association (NCGA).

LONG-STANDING INTEREST IN GRAIN QUALITY

Our organization has a long-standing interest in grain quality. In a competitive world market, we realize our customers are just as concerned about the quality of the grain they can buy from the United States as they are about the quantity we make available for sale.

The National Corn Growers Association believes the primary purpose of any grain quality standard should be to promote the retention of the quality of grain throughout the entire marketing process. We also agree with other commodity and grain industry groups that the official U.S. standards should describe and certify the quality of grain as accurately as possible.

**NCGA'S EXECUTIVE COMMITTEE ENDORSED THE BASIC CONCEPTS OF THE
BILL INTRODUCED BY SENATOR DASCHLE AND SENATOR BOND**

Last November, NCGA's Executive Committee endorsed the basic concepts of the bill introduced by Senator Daschle and Senator Bond, the Grain Quality Incentives Act of 1989. More detailed policy on grain quality will be considered by the National Corn Growers Association's voting delegates tomorrow in Phoenix. With your permission, I would like to submit detailed written testimony reflecting these final NCGA policies at our annual meeting as it begins tomorrow, perhaps next week.

Senator DASCHLE. Without objection, they will be part of the record.

Mr. SWANSON. Thank you, sir.

**LEGISLATION SHOULD NOT MICROMANAGE THE PROCESS OF
ESTABLISHING GRAIN GRADES AND STANDARDS**

I want to stress our overriding feeling on grain quality is that legislation should not micromanage the process of establishing grain grades and standards. More appropriately, legislation should set up a framework of goals and objectives of the grain quality policy within which Federal regulators should develop grades and standards. In this way, standards can be adjusted to changing market factors more quickly and efficiently.

USEFUL ELEMENTS OF S. 1977

Several elements of the Daschle-Bond initiative, S. 1977, would be particularly useful in helping to increase the overall quality of grain as it arrives to its ultimate user. Indeed, basing our system of grades and standards on economic factors important to the end-users must be paramount.

We agree with the need for certification and standardization of inspection criteria and the need for more cooperation between Federal regulators and those within the government community interested in the grain quality issues, including USDA's Federal Grain Inspection Service and Agricultural Research Service and our system of land-grant universities.

Our organization would also like to see more objective testing for various end-use properties. For corn, they would include protein, starch and oil content. In addition, we agree that U.S. grain standards should be studied in comparison with those of other nations and that differentials in price levels administered by the Commodity Credit Corporation should reflect true differences in the value of grain to final users.

**WE HAVE QUESTIONS ABOUT SOME SECTIONS OF THE GRAIN QUALITY
INCENTIVES ACT AS THEY CURRENTLY ARE WRITTEN**

I would add, however, that we have questions about some sections of the Grain Quality Incentives Act as they currently are written.

For example, it is somewhat unclear as to how FGIS is to determine adverse conditions that make grain unacceptable for normal intended uses in the foreign markets, as suggested in section 301 of

the bill, without more specifics on just who those end-users are. The result of this language could be that grain would be bought and sold on the basis of destination grades, as opposed to the current system of establishing grades at the first point of sale.

The design criteria for grades and standards in section 501 are useful, but we want to be careful the section does not mandate new grades and standards—only that it allows for modifications to reflect new technology and new end-use characteristics. Frequent changes in grades should be avoided because they can cause market disruptions and undermine the confidence of foreign buyers.

Although we agree with the measures of end-use performance should be more available to farmers, title VII's requirement that they be listed on the seed labels may not be the best way of going about it. Existing sources, including the Extension Service, trade associations, and market demand can better communicate those type of performance factors.

Finally, with respect to titles VIII, IX and X are rather vague as to how CCC standards should be adjusted to help recognize the differences in the true value of our grain.

Those last observations notwithstanding, Senators Daschle and Bond are to be commended for highlighting the need for more attention to the grain quality standards. Their bill has certainly been useful in promoting more communications between producers and the grain industry, which benefits both sectors.

HOPEFUL FOR WORKABLE PARAMETERS

We at NCGA hope the end product of this process is a set of workable parameters within which Federal regulators can mold realistic, value-based standards that will be fair to all market participants—end-users, merchandisers, and farmers. The National Corn Growers Association is prepared to offer any assistance we can toward that goal.

Again, Mr. Chairman, I thank you for holding these hearings, and I would be happy to answer any questions you might have.

Senator DASCHLE. Thank you, Mr. Swanson. Mr. Hawk.

[The prepared statement and attachments of Mr. Swanson appear at the conclusion of the hearing.]

STATEMENT OF ARVID HAWK, CHAIRMAN, GRAIN GRADES AND WEIGHTS COMMITTEE, NATIONAL GRAIN AND FEED ASSOCIATION, MINNEAPOLIS, MN; ACCOMPANIED BY ALEX S. CURTIS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, FARMERS GRAIN TERMINAL, INC., GREENVILLE, MS

Mr. HAWK. Thank you, Mr. Chairman.

Good morning, Mr. Chairman and members of the subcommittee. I am Arvid Hawk, and I appear today on behalf of the National Grain and Feed Association, whose Grain Grades and Weights Committee I chair. I am manager of grain handling for Cargill, Inc., Minneapolis, Minnesota. I am accompanied this morning by Alex Curtis, president and chief executive officer of the Farmers Grain Terminal, Incorporated, of Greenville, Mississippi.

CENTRAL QUESTIONS

At the heart of S. 1977 are the central questions of how and by whom quality is defined, and what role quality can play in furthering the economic interests of U.S. agriculture.

QUALITY OF GRAIN GROWN IN THE UNITED STATES, AS IN THE REST OF THE WORLD, PRESENTS A CHALLENGE THAT REQUIRES EFFECTIVE MANAGEMENT

The quality of grain grown in the United States, as in the rest of the world, presents a challenge that requires effective management. It is a complex and crucial management problem that begins at the farm level as producers decide first what crops, and then what varieties, they will produce each season. Add to that equation the climate and seasonal weather patterns, the producer's labor and inputs, and finally how crops are harvested, handled and stored before leaving the farm, and one begins to appreciate why grain quality is an issue that strikes close to home for the producer.

It is our industry that serves the vital need of utilizing the raw materials—the grains and oilseeds supplied by the farmer—to meet the quality and price needs and cost constraints of our foreign and domestic customers. Quality is not an unchanging absolute. Users of the same kinds of grain frequently require different quality specifications needed to meet their individual needs and intended uses. On a daily basis, each user balances those needs against the costs of products that can fill them to determine what makes economic sense.

LEGISLATION BEFORE THIS PANEL PROPOSES FAR-REACHING CHANGES IN STANDARDS AND GUIDELINES

The legislation before this panel proposes far-reaching changes in standards and guidelines related to grain quality, as well as extensive changes in grain-handling processes and equipment that could have significant economic implications for all of U.S. agriculture. The underlying assumption is that our customers will be willing to pay higher prices or increase their purchases of U.S. commodities in quantities to cover these additional costs.

The collective experience of our industry, however, leads us to question that assumption. Our industry has always made—and continues to make—aggressive efforts to provide customers with whatever quality requirements they request and for which they are willing to pay. It is simply in our own best interest to do so.

FEW CUSTOMERS ARE WILLING TO PAY THE HIGHER COSTS FOR QUALITY

As a witness appearing at the previous hearing before this panel has verified, few customers are willing to pay the higher costs for quality. We see no widespread evidence of additional demand that would compensate for the added costs imposed upon the producer and the domestic grain-handling industry by S. 1977.

If buyers are unwilling to pay the price for tougher standards, the costs will be borne by someone else—most likely the producer, who will inevitably experience lower cash-price bids for his or her

commodities. For our part, the industry has been unwilling to make unilateral changes that would pass these sorts of costs back to the producer when there has been a lack of demonstrable benefits in terms of increased market demand.

IT IS VITAL TO DETERMINE THE MULTIPLE RAMIFICATIONS AND ESTIMATED COSTS OF GRAIN QUALITY CHANGES BEFORE, NOT AFTER THEY ARE IMPLEMENTED

It is vital to determine the multiple ramifications and estimated costs of grain quality changes before, not after they are implemented. A case in point is the current research being done by Dr. Charles Hurburgh at Iowa State University and Dr. Lowell Hill at the University of Illinois who are examining the impact of considering broken corn and foreign material as separate factors under the official U.S. grain standards for corn. This project is being funded by the National Corn Growers Association and the National Grain and Feed Association and others.

WE CAN ONLY ESTIMATE THE UPFRONT COSTS OF IMPLEMENTING SOME MAJOR PROVISIONS OF S. 1977

We can only estimate the upfront costs of implementing some major provisions of S. 1977. Although many U.S. grain-handling facilities already have cleaning equipment, the vast majority would incur capital costs for installing such devices. At a country elevator, those costs might amount to between \$100,000 and \$500,000, depending upon whether a separate building would be needed to house new cleaners. At a major export house, the cost would reach as high as \$4 million or more.

WE HAVE ALSO CONDUCTED EXPERIMENTS TO ASCERTAIN HOW WE MIGHT MEET A HALF PERCENT DOCKAGE REQUIREMENT FOR EXPORT WHEAT

We have also conducted experiments to ascertain how we might meet a half percent dockage requirement for export wheat. The cost of procedures that would be entailed in such a requirement amounts to about 10 cents per bushel, based upon a wheat value of \$4 per bushel. Allowing for recovery of about half that value through the sale of the collected screen material as a feed ingredient, there is a net additional cost of roughly a nickel per bushel.

In terms of productivity, there also are costs inherent in such a dockage requirement. Our loading rates were reduced to about half of normal. Said another way, our costs of loading roughly doubled.

These are not final cost figures, but they illustrate the point that the changes proposed in this legislation carry a price tag, and will have major economic implications for our industry and all of U.S. agriculture. Thus, we urge a careful, consensus approach to this issue.

I would like to turn the time over to Mr. Curtis and let him make a few comments.

Senator DASCHLE. Mr. Curtis.

[The prepared statement of Mr. Hawk appears at the conclusion of the hearing.]

TESTIMONY OF OF ALEX S. CURTIS

Mr. CURTIS. Thank you, Arvid, and thank you, Mr. Chairman. I am Alex Curtis, president and CEO of Farmers Grain Terminal of Greenville, Mississippi.

Senator DASCHLE. Unfortunately, Mr. Curtis, I am going to have to ask you to summarize if you can. We have already expired all 5 minutes.

Mr. CURTIS. Yes, sir. I understand.

Senator DASCHLE. Go ahead and try to summarize your remarks.

Mr. CURTIS. I understand.

IF THE BLENDING CAPABILITIES WERE TAKEN AWAY FROM US, IT WOULD DEVASTATE US

Because of the fact that I am in the grain handling industry and I am also a producer of several grains and soybeans, I feel that I have some knowledge of how this works, particularly through the industry and how it might affect the producer. Just a couple of figures I would like for you to understand. I had our computer programmer go through every ticket on every load of grain that had come into our elevator or facility in the last 4 years, and out of those soybeans and wheat, 45 percent of the soybeans delivered to our company in the last 3 years have been No. 3 or below, 45 percent. 72 percent of the wheat has been No. 3 or below. If the blending capabilities were taken away from us, it would devastate us, not just our company but the producers in the area.

There is just not that much market, and there would not be that much market from the processors for the lower quality grain. These costs would necessarily have to be passed back to the producer. I have never known a situation where the producer was able to pass his costs up. Generally, these costs settle back at the producer level. Thank you, sir.

Senator DASCHLE. Thank you, Mr. Curtis. Mr. Friehe.

STATEMENT OF ERVAIN FRIEHE, CHAIRMAN, NEBRASKA WHEAT BOARD, McCOOK, NE

Mr. FRIEHE. Good morning, Mr. Chairman, and members of the subcommittee. I am Erv Friehe, a wheat farmer from McCook, Nebraska, chairman of the Nebraska Wheat Board, and on behalf of the 18,000 wheat producers of our State, we appreciate the opportunity to provide the subcommittee with our views on grain quality provisions in the 1990 farm bill. I will now summarize my written testimony and would appreciate having the full text made a part of the hearing record.

Senator DASCHLE. Without objection that will be done.

THE NEBRASKA WHEAT BOARD IS AN AGENCY OF STATE GOVERNMENT

Mr. FRIEHE. For your information, Mr. Chairman, the Nebraska Wheat Board is an agency of State government. Our board has been particularly active in efforts to improve U.S. grain quality.

**WE HAVE BEEN BEAT ON PRICE BY BOTH FOREIGN AND OTHER U.S.
PRODUCERS**

As in the case of South Dakota and other High Plains States, our farmers are farthest from their customers, particularly foreign buyers. In periods of global wheat surpluses, which means every year since 1975 except for the past year, we have been beat on price by both foreign and other U.S. producers. If we are going to compete for long distance markets, we must be able to offer quality at least as good, if not better, than our competitors.

GRAIN STANDARDS ARE OUT OF DATE

Our long-standing position is that the U.S. grain standards were written in 1917 to meet the low volume domestic marketing needs of that era, and are now both out of date and inconsistent with accepted international quality standards. We are in simple terms giving up the quality end of the global marketplace to our foreign competitors without a fight.

**THE FEDERAL GOVERNMENT MUST TAKE STEPS TO ENSURE THAT THE
UNITED STATES IS COMPETITIVE ON QUALITY**

The Nebraska Wheat Board is in full agreement with views expressed at this subcommittee's hearing on February 8. The Federal Government must take steps to ensure that the United States is competitive on quality if our decentralized marketing system does not provide the economic incentives for the private sector to fill this vacuum. We have also carried out an initiative to facilitate purchases of high quality wheat with low dockage and defect content to interested buyers in Scandinavia, various European countries. This effort has been conducted by working closely with foreign importers and somewhat outside traditional U.S. marketing channels.

FEBRUARY 8 TESTIMONY CONFIRMS OUR FINDINGS

I believe that the testimony received by this committee on February 8 from Soviet and European purchasers confirms our findings that foreign customers are increasingly demanding that the United States match the higher average quality standards of our major competitors. Our board was among the first to endorse the recommendations of the Office of Technology Assessment in its report just 1 year ago "Enhancing the Quality of U.S. Grain for International Trade." Together with Dr. Hurburgh and Don Anderson of Anderson's, we organized the U.S. Grain Quality Conference held in September of last year.

SUPPORT S. 1977

We applaud the initiative which you, Senator Bond, and our Nebraska Senators have taken in sponsoring S. 1977. I am pleased to again express our strong support for the objectives and provisions of this legislation.

As with any legislation, there are areas where we would like to see some changes. Past congressional efforts to encourage the private sector to improve grain quality demonstrate that anything not

required by statute will probably not happen. The legislative history of grain quality improvement is littered with good but unfulfilled intentions. However, we also understand the need to provide enough flexibility for the regulatory process to achieve congressional objectives. As a result, we urge you to maintain the requirement that U.S. wheat exports equal or exceed the average quality levels of our major foreign competitors within a reasonable but specified period of time. This timetable should apply to levels of dockage, total defects, and foreign material in export wheat shipments, and should not exceed 5 years.

WE ALSO STRONGLY SUPPORT THE PROPOSED PROHIBITION ON BLENDING WHEAT OF LESS THAN NO. 3 GRADE WITH HIGHER QUALITY WHEAT

We also strongly support the proposed prohibition on blending wheat of less than No. 3 grade with higher quality wheat. No other export country permits this lowest common denominator practice. If Congress does not mandate tighter standards for wheat grades which we would also support, there is no other way to get out of the cycle of blending good quality grain down to our low grade tolerances. Now is the time for the United States to join the rest of the world.

FOREIGN BUYERS—QUALITY IS A PROBLEM

In closing, Mr. Chairman, I would only confirm from a producer's perspective what the subcommittee heard from our Soviet and European customers at your last hearing. We are all familiar with the argument of our grain exporters that the United States does not have a quality problem because buyers can order any quality they want on the export certificate. The point is, however, that they do not. They do not because, as Mr. Vervaeke of FEDIOL stated, foreign buyers have to pay a premium for clean, high quality grain from the United States, but they can get high quality at a competitive price from our competitors. And as Mr. Ageev of Exportkhleb warned, unless the United States makes itself competitive on quality, we will bear the brunt of any future reduction in Soviet grain purchases.

The Nebraska Wheat Board appreciates the opportunity to present its views today, and I will be happy to answer the questions the subcommittee may have.

Senator DASCHLE. Thank you, Mr. Friehe. Dr. Hurburgh.

[The prepared statement and attachments of Mr. Friehe appear at the conclusion of the hearing.]

STATEMENT OF CHARLES R. HURBURGH, JR., ASSOCIATE PROFESSOR, DEPARTMENT OF AGRICULTURAL ENGINEERING, IOWA STATE UNIVERSITY, AMES, IA

Dr. HURBURGH. Thank you, Mr. Chairman, members of the committee, friends.

My name is Charles R. Hurburgh. I am a grain quality specialist on the faculty at Iowa State University, but I come here today as one who cares about the future of American agriculture and its long-term success in both export and domestic markets. Although I

should just say that I probably care no more or no less than anyone else in this room.

GRAIN QUALITY

Quality differences among suppliers are directly convertible to economic terms if the quality trait is a relevant one for the marketplace.

There are documented cases where the United States grain quality is inferior in an economic sense to its competitors. For example, over the past 20 years, U.S. soybeans have had about 1 percent more foreign material, slightly less protein, and about 1½ percent less oil than Brazilian soybeans, while on the market costing as much or more than Brazilian soybeans. This combination of grain quality deficiencies translates, depending on the price of meal and oil, to about 40 to 45 cents a bushel disadvantage that we are sur-rendering to the competition. No one is doing anything wrong. There is just no incentive to correct the situation. The issue then in quality, as far as I can see, is not whether or not the United States is certifying its grades and standards accurately, but whether or not U.S. grain quality in general is competitive for the price in world markets. And under this scenario, the "Let them pay for higher quality" simply does not work.

S. 1977

As the recent Office of Technology Assessment grain quality report observed, grain quality problems are more than just standards problems. The proposed legislation, S. 1977, addresses many concepts and issues that are beyond or not related to grain standards.

GRAIN STANDARDS

However, in the area of grain standards, my view is that the standards should provide the institutionalized framework for the United States to be quality—competitive in world markets. Our customers should not have to work or pay noncompetitive prices to get our best. The longest standards section in the bill, title V, requires that the U.S. standards be based on an economic framework—a concept initiated by the Grain Quality Workshops in 1986, and supported by both the Bush administration and USDA at the fall conference that Mr. Friehe mentioned. Another standards section, title VI, would integrate food safety regulations and grain standards, which is, I think, an idea hard to refute in today's consumer climate. Indeed, on a recent trip to Asia, the first question that I got from soybean buyers in both Japan and Korea was how was the U.S.A. going to address the chemical residue issue? That question was closely followed by how are we going to handle the foreign material issue? A recent survey in Food Technology magazine showed residues to be the No. 1 consumer food safety concern. The last standards sections in titles II and III would force debate on specific standards changes relating to cleanliness, competitiveness and blending—issues that have long been neglected by the U.S. market.

THE BLENDING PROPOSAL IS LIKELY TO BE THE MOST CONTROVERSIAL ISSUE

The blending proposal is likely to be the most controversial issue. I believe there are low quality levels that should not under any circumstances be blended with grain in general commerce. While these levels may not be all grain below No. 3, national policy is necessary to stimulate the technical debates to define those levels. The 5 to 10 percent of U.S. grain that becomes severely deteriorated or dirty contains much higher levels of a whole array of undesirable substances. Blending with better grain does not "upgrade" the poor grain; it just dilutes the defects. Economic logic dictates that customers tacitly adjust their average prices based on expectations of quality.

CONSISTENCY IN GRADING FARMER-DELIVERED GRAIN

Consistency in grading farmer-delivered grain will be a necessity with more tests and tighter tolerances for defects. Only FGIS and its system of agencies are in a position to provide the standards necessary for that consistency. And yet I see no need for this provision to create a major additional expense or intensive governmental presence at country elevators.

VARIETY DEVELOPMENT AND TESTING RESEARCH

Variety development and testing research can change the entire complexion of U.S. grain relative to competitors. For example, most of the soybean protein and oil deficiency could be eliminated in 2 or 3 years simply by removing the lower 25 percent of varieties from a protein and oil standpoint.

I emphasize the need to fund the various research activities. Statements of support are welcome, but they do not generate results.

BE CAREFUL NOT TO OVERSTUDY THE ISSUE

We must be careful not to overstudy the issue. The overall impact study would not, in my opinion, yield useful results because its conclusions would depend on specific assumptions you used to start it. Each regulatory action will require an impact study of its own.

NEW LEGISLATION

The Grain Quality Workshops were successful in 1986, in the main, because congressional interest added an urgency to the discussions. The partnership between industry and Congress worked because the legislation that was passed at the time did not create counterproductive situations. I believe this new legislation will reenergize the Workshop and that partnership. Setting the rules of play is a responsibility that no grain handler can risk alone. For example, no merchant could afford to unilaterally forgo all profit opportunities from blending sample grade grain into No. 2 or No. 3 cargoes. Therefore, Congress has a significant opportunity to revise the rules for the long-term benefit of all market participants.

There is a cost any time a business changes its philosophy. These are the costs of staying in business.

WE HAVE A DECISION TO MAKE

I doubt there is anyone in this room who wants America to fade as a dominant supplier of grain or to be the supplier that always loses when internal and external competition makes more grain available. We have a decision to make. Accept the responsibility of meeting the competition head on or concede that others can produce a better product to be preferred until their supply is exhausted. Other U.S. industries have faced similar choices. American agriculture must learn from their experiences. Thank you, sir.

[The prepared statement and attachment of Dr. Hurburgh appear at the conclusion of the hearing.]

Senator LASCHLE. Thank you, Dr. Hurburgh.

Senator Bond.

Senator BOND. Thank you, Mr. Chairman. I have a lengthy statement that I would like to submit for the record.

Senator DASCHLE. Without objection.

[See pp. 176-177 for the prepared statement of Senator Bond.]

STATEMENT OF HON. CHRISTOPHER S. "KIT" BOND, A U.S.
SENATOR FROM MISSOURI

Senator BOND. I want to commend you for holding this hearing and for your great leadership in this effort. I reviewed the testimony that we received at last week's hearing. The Russian grain buyer reported that he received about 10 times as many complaints from his users about the quality of U.S. grain as that of other supplying nations. Our friend from the EC said that there are quality problems with U.S. soybeans that make them uncompetitive with beans from Brazil. In light of those statements, I was very pleased with the testimony of my neighbor in Missouri, Gary Riedel, who was very eloquent in his description of the frustrations he feels as a soybean grower.

Over this past Senate recess I had the opportunity to ask many farmers in Missouri about the issue of grain quality, and I am pleased to tell you that Missouri producers recognize the importance of world markets. They are willing to meet the challenge to remain competitive. They know that movement toward a more quality oriented system, which reflects end-use characteristics, must be passed through to producers. Those that produce high quality grain should be compensated for the quality.

Mr. Chairman, I also want to submit for the record the excerpts from the letter sent to you by Mr. Robert Reid of Dixie Portland Flour Mills, who concludes that for the customer quality is irresistible, and for industry it is essential.

Senator DASCHLE. Without objection the material will be submitted for the record.

[The letter and extracted comments supplied by Senator Bond follow:]

DIXIE PORTLAND FLOUR MILLS, INC.,
Chattanooga, TN, February 6, 1990.

The Honorable Senator TOM DASCHLE,
U.S. Senate, Washington, DC.

RE: Bill 1977, "Grain Quality Incentives Act."

DEAR SENATOR DASCHLE: I want to commend you, your staff and colleagues for preparing and introducing Senate Bill 1977, better known as "The Grain Quality Incentives Act." Having been a flour miller for 30 years, I have a great interest in wheat quality and have been disturbed as the quality of U.S. wheat, specifically the Hard wheat classes, has deteriorated. It is particularly distressing when we know that our competitors in the world market place have been improving the quality of their wheat. I have enclosed a copy of a speech I made at the National Conference of the Association of Operative Millers that addressed problems with Hard Red Winter wheat as I perceive them.

While your bill primarily addresses export grain, several aspects of the bill are of great interest to domestic processors and I believe that it is important that they not be cut or left out of the bill in its final form. These are:

1. *Title VI—Grain Quality Research and Testing.*—There is a great deal of work to be done in this area, particularly as it pertains to the milling quality of wheat. If you check the list of complaints received for U.S. wheat, I think poor milling quality would be high on the list if not at the very top.

2. *Title VII—Variety Performance Information.*—This is going to be critical in the future as processors are required to operate on smaller inventories and the varieties of flour we produce increases as more and more customers add specialty items requiring special flours. ("Just in Time" applies in processing just as it does in manufacturing.)

3. *Title VIII—Price Support Loan Incentives for Clean Grain.*—This is essential as pressure increases to reduce fumigants and insecticides, and to improve the integrity of America's food supply at the same time.

4. *Title X—Quality Requirements for Commodity Credit Corporation-Owned Grain.*—This is necessary if the producers are to have motivation to produce quality products.

While all of the above are important, I feel that the sections addressing clean grain are absolutely essential. If anything they should be broadened to cover grain throughout the system. I am a strong advocate of clean grain; with today's technology there is no rational reason for not cleaning grain at the first country elevator and keeping it clean throughout the system. Not only would this dramatically improve the quality of the grain but it also reduces employee exposure to grain dust and would virtually eliminate dust explosions.

Thank you for your time.

Yours truly,

ROBERT G. REID,
Vice President, Production.

Enclosure.

The following comments are extracted and revised from a speech titled, "The Deterioration of the Milling Yield of Hard Red Winter Wheat," by Robert G. Reid, made at the 1988 National Conference of the Association of Operative Millers, and published in the Association of Operative Millers—Bulletin, July 1988.

I have been aware of the general decline of the milling quality of wheat for some time. Recently, this awareness has become a genuine concern. My concern was stimulated by comments that the flour being shipped to bakeries has deteriorated since flour mills have gone to a 76 percent extraction.¹ Our mills has not gone to the higher extraction, but yet flour yield² has progressively worsened over the past 10 years. Our Ark City, KS, mill, for example, consistently ran a 76 percent extraction in the early 1970's. Today, they are happy to get 74 percent, and it generally isn't that good. I have talked to a lot of people about the problems, and everyone seems to agree that we have problems. I read everything I could find concerning the subject, and have done a lot of reflecting on the subject. As I now see it, it is the classic case of American industry, in this case agri-industry, compromising quality for quantity. Pick up any business publication and you can read articles about it. In

¹ Flour extraction refers to the percent of flour produced from the wheat purchased by a mill. The balance of the product is sold as millfeed.

² Flour yield refers to the number of bushels of wheat processed to produce 100 pounds of flour. (75 percent extraction=2.22 yield; 3 points of yield=1 percent extraction)

this case the problems have been compounded by government policies and regulatory agencies.

PRESSURES TO INCREASE CROP YIELD

To understand our present problems, you have to go back to the early and mid-1970's and look at the situation then. The primary objective of the grain industry, save for the flour millers, was to grow as much wheat as possible, and that is the message the agronomists and breeders heard.

The predominant wheat varieties grown in Kansas during that earlier period were Scout, Eagle and Triumph—all good milling varieties with high 1000 kernel weight, and good extraction rates.

GOVERNMENT ACTIONS ADVERSELY IMPACT ON QUALITY

Since that time, we have had the infamous grain embargo of 1979, leading to a precipitous decline in exports and subsequent increase in carryover between crop-years. This led to a tremendous increase in farm storage, bunker storage, and practically every other type of temporary storage imaginable. We then had the ban of liquid grain fumigants, and a series of government farm subsidy programs, regulating the manner in which the farms operate. We have also seen the completion of compliance with EPA regulations in the industry; with virtually all of the dust now being captured and returned to the grain where it remains until it reaches its final destinations.

During the last 8 years, the predominant wheat variety in Kansas has been Newton, a poor milling wheat.

That sets the stage for where we are now; let's analyze these various factors.

VARIETY RELEASE

First, there is the problem of the wheat varieties. As indicated earlier, the primary direction given wheat breeders was to increase the yield per acre. To achieve this, the breeders increased the number of kernels per spikelet from two to three. This had two significant results. First, it reduced the mean kernel weight of all the berries, even the good healthy ones. Second, the extra kernels were very vulnerable to stress. Stress of any kind—heat, drought or disease—causes these kernels to abort, leaving flour millers with the small, shriveled kernels we've come to know and hate. I would like to point out here, that it takes an average of 10 to 12 years to develop a variety and bring it to market. So, the varieties that we are milling today were, for the most part, conceived in the 1970's. While this was going on, most flour millers were like me, enjoying great extractions and totally oblivious to any of the work being done in wheat variety development.

FARM PROGRAMS AND PRACTICES

This leads us to the subject of the small and shriveled kernels that have become so prevalent in recent years. As I mentioned earlier, there is a strong tendency for the extra wheat berry being forced on the spikelets to abort due to any type of stress. In recent years diseases have become more prevalent in Kansas, which has caused millers of Hard Red Winter wheat to receive more and more of the shriveled berries. I have been told that one reason for the increase of the diseases is the wet growing seasons the past several years. At the same time, the government has instituted the Acreage Reduction Program, where farmers leave part of their land idle, which encourages weeds and disease. Because farmers need to keep their production base for the various crops, they no longer rotate crops but plant the same ones on the same land every year; this too encourages disease.

Another negative impact of farm policy is that it encourages the growth of cheat or chess grass. This is the long narrow seed so common in south central Kansas the past 10 years. The growth of these grasses could possibly be encouraged by the new farming method, where farmers plant the grain in a single pass, called disc and chisel; rather than the old method of plowing, disking and then planting. I'm not a farmer or agronomist so I can't state that as fact, all I know is that cheat is a much greater problem than it used to be.

The compound effect of the shriveled grain and cheat can be devastating.

We have been unable to count the cheat as dockage, which adds insult to injury. Even though the cheat passes through the middle screen of the dockage tester, practically always more than 50 percent of the material in the dockage pan is shriveled wheat, so it is not considered dockage. The cheat is considered foreign material for grading purposes, but we still have to pay for it.

As if the additional screenings from shriveled kernels and cheat aren't bad enough, millers are also receiving more foreign material and screenings due to other government policies and regulations:

The first of these is the compliance with EPA regulations. Years ago you could drive across Kansas and see grain dust discharging from all the country elevators. Now all the dirt is captured and sent to flour mills, where the mills are given the job of removing it.

The second major factor affecting our screenings develops from the compound effect of dramatic increase of wheat in storage at the same time as the banning of liquid fumigants. This has resulted in our receiving at the mills a great deal more insect damaged grain, which in itself increases the foreign material. We are then forced to take even more screenings off in our cleaning houses in an effort to control insect fragment levels in the flour.

When you add all these factors up, I think it is safe to say that we are taking off, on the average, 1 to 2 percent more screenings now than in the 1970's.

To sum it up, we are being handicapped by at least three to six points of yield before we even get the wheat to first break. Then, the wheat that we get to first break is made up of smaller berries, primarily bred for yield in the field not in the mill.

USE OF OIL FOR DUST CONTROL

Another factor which has hurt our yields is the growing use of oil to control dust. Every study we made has shown that it hurts the milling yield. Nevertheless, rather than clean the grain and improve the quality, many operators, including some millers, spray it with oil in the name of safety and cost control. It's the classic quick fix. In other facets of the food industry, that would be considered product adulteration. This is the grain industry's response to clean grain, and the use of oil by flour mills to control dust is implicit approval of its continued use throughout the industry. While many millers think they are saving money to use oil, they fail to recognize what it would be worth to receive clean grain.

A COMMITMENT TO ACTION

There are four areas of activity that I believe are important for the milling industry to pursue to improve the quality of wheat reaching the mills:

1. Work with breeders and other concerned parties to improve overall kernel size, with emphasis on milling extraction. Develop some minimum standards for 1000 kernel weight before a variety is released.

2. Work with the FGIS for a change in standards, so everything that passes through the middle sieve of a dockage tester is considered dockage, regardless of makeup.

3. Do further research to determine if present growing practices are contributing to diseases. Presently, disease resistance is the number one priority of the breeders. If they can get any relief in this area, then they can give more emphasis to other areas such as kernel size.

4. I am absolutely convinced that the best thing that could happen to the grain industry would be for the grain to be cleaned at the first country elevator and kept clean; it would benefit all concerned, from the farmer to consumer. Cleaning the wheat dramatically reduces infestation, cleans up our elevators, reduces elevator shrink, gives the farmers and grain merchants a better product to sell, gives us a much better raw material, and gives the consumer a product free of infestation and insecticide residues. The time has come for our industry to move out of the dark ages and catch up with the rest of the world.

I think the entire grain industry (from farmers to grain commissions to the exporters) is becoming aware that it needs to upgrade its products. It is truly a global market now and the United States is primarily competing with subsidies. Canada and Australia beat us on quality, Argentina and Europe on price. The reality of the situation is that clean sound wheat, of good milling quality, is good for the entire industry.

QUALITY ALWAYS WINS

To quote from the article, "What America Makes Best," in the March 28, 1988, issue of *Fortune*, "the achievement and the preservation of product excellence takes common sense, diligence and attention to details—as they always have. What is different today is that the pursuit of quality, whether in planes, pacemakers, percales or pianos (and I would add wheat), is no longer voluntary. If U.S. industry expects

to win still more customers and market share, it has no choice but to improve its products. For the customer, quality is irresistible. For industry it is essential."

Senator BOND. Dr. Hurburgh, do the current grades and standards properly reflect end-use performance and translate end-use value through the marketplace? Is it a reasonable goal that grades and standards should reflect end-use value characteristics?

Dr. HURBURGH. It is a reasonable goal. The current characteristics in the grades are basically physical defect factors reflecting soundness and those sorts of things. Factors which bear on end-use performance are starting to appear in the grades. For example, protein and oil in soybeans. But we certainly have a considerable ways to go to keep that process moving. It is, however, both a laudable and achievable goal that our standards could do that.

Senator BOND. Mr. Swanson, we have heard previously and again today a lot of praise heaped on the Grain Quality Workshops. I expect that more will come. Would you feel comfortable if we were to end this hearing saying that the Grain Quality Workshop is a fine and progressive institution and that we can turn over the future of the corn industry to the Workshops?

Mr. SWANSON. I have been a participant of the Grain Quality Workshops over the last 4 or 5 years. If I have any criticism, I think that perhaps they have not been as proactive as they could have been. There has been a situation where they tend to respond to the problems at the time. If they would change their mission and become more proactive and be more interested in trying to determine a long-term strategy on where we should go with grain quality policy, then I think I would be comfortable. If that does not happen, then I would not.

Senator BOND. Mr. Curtis, you talked about the offgrade grain that you receive at the elevator. Do you discount for that low grade, and do you pay a premium for quality grain delivered to you?

Mr. CURTIS. There are discounts, of course, that apply for grains below No. 2; yes, sir.

Senator BOND. You mentioned the cost to the producers which we all understand. If there were an adequate premium in the end-use market for the top quality grain, would that not come back to you, and would you not pass that along to the producers who deliver you No. 1 grade quality grain?

Mr. CURTIS. Certainly it would be passed through to the producer if there were that sort of premium. I feel that there is not that sort of premium in the marketplace at this time and possibly it could be developed. As a small exporter, not a large exporter, we have not been able to find that market for that premium for that high quality grain at this time. Our customers have been very well satisfied with the grade of grain that we have shipped them.

Senator BOND. Well, I am glad to hear that you have not had that problem. Certainly other purchasers have indicated there is a problem.

Mr. Hawk, I am interested in how the Grain Quality Workshops work. If there is no rigid makeup of membership or specific rules on representation, how do you decide who can vote and who cannot at one of those meetings? Would it be possible to bring in people

who do not normally attend the Workshops, simply for the purpose of a vote?

Mr. HAWK. We have invited other people into the Workshop for purposes of information. Generally speaking, the voting is restricted to those who are active participants. Certainly the criticism that Ron has pointed out is a valid criticism, and we are in the process of changing that. We are trying to more formalize the Workshop process in terms of its representation. The chairmanship is going to rotate on an annual basis, and we are going to develop a mission statement, where we are going to put together a steering committee to help run the organization, and those kinds of things. So we are moving in that direction.

Senator BOND. Could you tell us a little bit about the recent vote on the grain sorghum proposal regarding tighter standards for broken kernels and foreign material? Who voted on that?

Mr. HAWK. Yes, sir. Obviously in any debate there is going to be differences of opinion, and that is one of those areas where we have not been able to develop a consensus opinion on that specific issue. There are issues, of course, that we have not developed a consensus opinion. That is what we think the Workshop is all about, fully discussing the issues, getting them out in front of everybody and discussing the pros and cons, and we do not expect to be able to always develop a consensus opinion.

Senator BOND. Thank you, Mr. Chairman.

Senator DASCHLE. Thank you. Senator Boschwitz.

Senator BOSCHWITZ. Mr. Chairman, I want to tell you I am like everybody else, I am for quality. As a matter of fact, I spent most of my career dealing with commodities and complaining to the sellers about quality. I used to be quite a proficient complainer, if you will, just to keep them on their toes. So when buyers complain, I understand why, since I have been in that position myself.

My question is, who pays? I am just afraid it is going to work its way back down to the farmer because that is the way it always happens. My friend from the Nebraska Wheat Board says anything not required by statute will not happen. I must tell you I have a little more confidence in the free market than that.

Who pays for higher quality grain? I understand that in your bill, Mr. Chairman, you have loans based on quality, and that in my judgment would be very, very difficult to implement. I also understand that blending, in some instances, is not going to be allowed. I would like to know how a country elevator is going to handle that if it cannot blend, and how many bins does it have to have, and what kind of costs are we going to impose? These costs, in my judgment, are going to be passed back to the farmer because just as I tried to pass costs on when I was in business one way or another, so will the people in the trade.

I am pleased that you have a cost-benefit provision in this bill, and I would suggest, Mr. Chairman and Senator Bond, you ask the Department to undertake that study right away because—I will wait for a minute to get the chairman's attention—I would say to the chairman, Senator Daschle, that I am most interested in the cost-benefit provisions that you have in the bill. I would hope that you would require that the study be done very rapidly. I would be influenced by the cost-benefit analysis to see who is going to pay, to

see whether or not customers are really going to pay for this increased quality that is required, to see whether or not the lack of blending would be a cost that would be put upon the farmer. The underlying assumption that the buyer will pay, that Mr. Hawk spoke about, or somebody there spoke about, is an assumption that I am not sure is going to stand up in the trade.

Senator Bond mentioned if there were an adequate premium in the end-use market. I would ask those people on the panel if they have found that there is an adequate premium in the end-use market. I think Mr. Hawk spoke about that. I am just concerned whether quality is a wonderful thing. I understand that the Canadians do have, indeed, better quality in some instances. I would like to ask the panel who pays for that? I will focus my questions in just a moment. I asked my staff what would happen if you could not blend? Especially out there at the country elevator when the farmer brings in his wheat. What happens if you cannot blend?

Not only could it cause problems for elevators, but the inability to blend could force severe dockage penalties on farmers. In areas of drought where there are weather caused problems of test weight or quality, farmers could bear an additional cost by not having their grain being able to be blended. I am most concerned about some of the implications of this bill, and so I ask the various members of the panel, are the buyers going to pay the premium? Who pays in this whole thing, and specifically, who pays for the allegedly better quality in Canada? I will start with Mr. Swanson and go right down the panel.

Mr. SWANSON. Thank you, Senator. As far as incentives or premiums to pay for quality of grain, I think we have to, first of all, determine a difference between what we are talking about as far as the sanitary conditions of the grain is concerned and also the end-use value characteristics of the grain. I think if we move into a market where it becomes segmented for specific uses, in this particular case, corn for specific markets, there could be become a potential for an incentive or a premium for a high quality corn that a manufacturer could use as opposed to some other things.

I heard a comment one time, a starch manufacturer said I can get just as much starch out of No. 3 corn as I can get out of No. 1 corn. If No. 3 corn will stay in condition until I get it processed through my plant, I will buy No. 3 because it is cheaper. On the other hand, if you have a particular variety of corn that is 2 percent higher in starch than the normal corn that I get from the market, I would be willing to pay a premium for that because the 2 percent higher starch will increase my yield, thus my profit potential will go up. Therefore, there is an area that he can extract a premium from to pass back to the producer to continue to supply the higher quality corn. So I think as we focus on the end value characteristics and move into the future, there will be incentives for high qualities of corn based on what is inside the corn as opposed to what the kernel itself looks like on the outside.

Senator BOSCHWITZ. Well, Mr. Swanson says that if you can get better grades, people will pay for it. A rather philosophical type of answer. Mr. Hawk, who pays? Is there an adequate premium in the end-use market that Senator Bond speaks about? Please talk a

little bit about Canada. Is their quality better, and who pays for it up there?

Mr. HAWK. OK, Senator Boschwitz. Who pays? Generally if, and from our viewpoint the customer, and that was verified in the February 8 hearing that the customer is not going to pay more. So if there is any further, any costs associated, that has got to come back through the merchandising chain back to the farmer ultimately. Are there people who are willing to pay extra for a higher quality grain? The answer is yes. We do that, and I have a list of those here, if you would like to see it. But they do pay extra for that, and they make the decision of whether the premium is worth that extra quality.

[The list of modifications in export requirements compared to the most commonly traded grade referred to by Mr. Hawk follows:]

A WIDE RANGE OF CUSTOMER NEEDS

The variety and specificity of customer needs is illustrated by the following list of modifications in export requirements compared to the most commonly traded grade: Corn (normal term: No. 3 YC, 15 percent moisture):

U.S.S.R.—moisture by subplot.

Egypt—No. 2 YC, 14.0 moisture with price discounts on an equal percentage basis up to 14.5 moisture.

Portugal—No. 2 YC, 14.5 moisture, with grade by subplot.

Brazil—No. 2 YC, 14.5 moisture, with maximum dust of 0.5 percent.

Israel/Taiwan—No. 2 YC, 14.5 moisture.

EEC—No. 3 YC, except some starch buyers stipulating maximum of 3 percent foreign material.

Iraq—No. 2 YC, 14.0 moisture, 3 percent broken kernels, damaged kernels not to exceed 5 percent.

Mexico—No. 2 YC, 14.5 moisture.

Soybeans (normal term: No. 2 Yellow soybeans):

Taiwan—guaranteed oil and protein content, 1.5 percent foreign material on individual sublots.

Korea—No. 1 Yellow soybeans, all factors.

Portugal—13-13.5 moisture, 1.5 percent foreign material.

China—Ohio, Indiana, Michigan soybeans, 2 percent damage or less, food bean notation.

Japan—for food use: Ohio, Indiana, Michigan soybeans, 0.9 percent damage or less, 0.1 percent heat damage or less, 1 percent foreign material; for crushing: 13.5 moisture, 1.5 percent foreign material.

Yugoslavia—13.0 moisture.

Denmark—No. 1 Yellow soybeans, all factors.

Israel—13.5 moisture.

Hard Red Winter wheat (normal term: No. 2 HRW, 13.5 moisture):

Norway—13.0 minimum protein.

U.S.S.R.—11.5 minimum protein, 59.8 minimum test weight, 0.5 maximum scab.

Iraq—12.0 minimum protein, 60.6 minimum test weight, 12.5 maximum moisture.

Algeria—11.0 minimum protein, 59 minimum test weight.

Zaire—12.5 minimum protein, 12.5 maximum moisture.

Bolivia—11.0 minimum protein, 59 minimum test weight.

Japan—11.7, 13 or 14 minimum protein (depending on class/tender needs), 0.5 maximum sprout damage, 0.2 maximum heat damage, 13.5 maximum moisture, 1 percent maximum dockage.

Poland—12.5 minimum protein (dry matter basis), minimum 300 Hagberg, 60.6 minimum test weight, 12.5 maximum moisture, wheat gluten minimum 25.

Soft Red Winter wheat (normal term: No. 2 SRW):

Portugal—11.5 minimum protein.

Israel—0.5 percent maximum dockage, 13.0 maximum moisture.

Colombia—9.5 minimum/11.5 maximum protein.

China—59 minimum test weight, 1 percent maximum dockage, 9.0 minimum/10.3 maximum protein.

What this list also illustrates is the level of technical sophistication necessary to meet the wide range of customer needs in the marketplace. Since grain is not grown

to meet these specific requirements nor shipped from interior locations with such needs in mind, it is up to the export elevator to produce the specific product the foreign customer wants from the supply of grain generally available.

Blending, a practice that sometimes has been misunderstood, is an essential tool in this process. Exporters blend different lots of grain that fall within a narrow range of quality levels to produce a product that meets contract specifications. The process is critical to providing good service at an acceptable cost. Blending should not be confused with adulteration, which is the purposeful addition of nongrain material to the grain stream and is both unethical and illegal.

Mr. HAWK. All of our customers are not interested in that extra quality and do not want to be forced and saddled with the extra expenses of that. The Canadian system in terms of true quality, intrinsic quality, their wheat is no better than U.S. wheat. In terms of cleanliness, there is no question that they do ship cleaner grain than the United States. Unfortunately, I am a technician and not a merchant, Senator, so I do not know who pays for it in Canada. My guess is that the producer pays for it. Their system, as I understand it, is to pay the producer an upfront price and then when they are through marketing all their grain minus all of their expenses, then if there is any money left over, he gets additional payments.

So what they do is the Wheat Board basically takes care of the system, subtracts out their costs and allocates the money back.

Senator BOSCHWITZ. Mr. Curtis, you answered the question a little bit already because you said you have not found a market for higher quality grains. I wonder what impact would this bill have on the farmer?

Mr. CURTIS. Thank you, Senator. There is a common perception, amongst producers primarily, that the mixing, blending, processing, whatever, the handling of all varieties of grain in the grain system and handling those varieties together accrues to the benefit of the grain handling industry itself. That perception could be no further from the truth. The reason for this system that we have in designing certain lots of grain, to satisfy our customers, is a system that extracts the maximum value from every load of grain that comes to the elevator.

A farmer does not bring all No. 1 or No. 2 grain to the elevator. He brings every quality from one end of the scale to the other. And if the grain handling industry does not have the freedom to take all these many diverse qualities of grain and maximize the value of them, then certainly it does not increase the value of the higher quality grain. It increases the value, a blended value, of all the grain up and down the scale.

In our exporting that we have done, and this is to the Caribbean, to the northern part of South America and to Mexico, the question that those customers have answered for us is "why do you buy grain for us in the United States rather than Brazil, which may be closer to you," and in every case, that answer has been quality. They are perfectly satisfied with our quality.

Senator BOSCHWITZ. Mr. Friehe, you apparently feel there has to be a statute in order to get quality. Do you have any concern that your 18,000 members may suffer some loss because of the lack of being able to blend and the increased cost at an elevator? Some elevators, I suppose, are as small in Nebraska as they are in Minnesota or South Dakota. Are you concerned about the cost and who do

you think is going to pay for the increased quality that you want to mandate?

Mr. FRIEHE. Well, first of all, the elevators in my area in wheat, and I am a wheat farmer, are segregating things like protein now. So grain could be separated, I believe, at least within Nos. 1, 2 and 3.

Senator BOSCHWITZ. But I think there are more segregations in this bill, if I am not mistaken.

Mr. FRIEHE. Probably are. As to whether the customer will pay more, certainly. The Nebraska Wheat Board has helped consummate some sales of foreign wheat where the customer has paid more. As to will I as a farmer stand part of the cost? Certainly I will stand part of the cost. However, I think we need to keep in mind that if we continue the downward trend of exports in wheat as we have in the 1980's from some 50 million metric tons down to a point of where we exported like 25 million metric tons. That is a big price for me as a producer to pay. I am not producing wheat—

Senator BOSCHWITZ. What has been exported as of late? I think some of that has returned.

Mr. FRIEHE. Some of it has returned, yes. I think we are up to 30, 35 million.

Senator BOSCHWITZ. Is that correct? Does anybody else have that figure on the tip of his tongue?

Mr. FRIEHE. We certainly are not up to where we were in past years. The other thing that concerns me, Senator, is that in the wheat business again, we are beginning to see more competitors all the time. The Russians at one time in the late 1950's were exporters of wheat. We believe you could see that again. If that happens, it is more important for us to have a quality of wheat that is equal or better than our main competitors.

Senator BOSCHWITZ. Dr. Hurburgh, who pays for this and how do you see the impact of this bill upon the farmers? Is there a market for the premium wheat? Do the premiums that are imposed by this bill and the lack of blending cause additional costs at the elevator that are going to be passed on to the farmer?

Dr. HURBURGH. To your first question who pays the bill for improved quality? I submit that we all take the loss if our market share declines because of economic value deficiencies related to quality. My background is corn and soybeans, and so I go back to that soybean example that I used. In that particular case we can document the loss of market share because U.S. beans economically were not providing the value that our competitors were. We all in the United States took that loss for that. So, it would be unreasonable to expect the customer to pay more in those instances to fix that problem.

To the question of the blending limits and the difficulties that might cause in the grain handling system, I do not know what levels of grain should be unblendable. I think that is something for the workshops and the regulatory process to define. However, tighter standards and blending restrictions would quickly translate into overall quality improvements of the grain coming into the elevators, so the situation probably would not exist at all by virtue of growers and others changing their operating practices. As a result

of some of the studies that we are doing on grain quality, I have come to the conclusion that many of these grain quality improvements would not necessarily have to cost a great deal of money if they were initiated at the place where quality starts. That is early in the handling system, either the farm or the country elevator. We can simply prevent them with a significant savings in operating costs and then not have the problem to deal with through the system.

Senator BOSCHWITZ. I must tell you I did not understand how you answered that entirely. I have a great fear that by making the quality standards more technical and more complex the very large grain companies will figure out a way to defend themselves in that whole situation. You are optimistic that it all should start on the farm and the farmers will not bring in the low quality stuff. I am afraid that in all my experience, when you make laws and quality standards and those kind of things more complicated, the person least able to defend themselves in that whole transaction is he who is weakest in the chain and probably from a bargaining standpoint, that is the farmer in this case.

I would like to see the cost-benefit analysis that is done. Mr. Chairman, I will save my other questions for later.

Senator DASCHLE. Thank you, Senator Boschwitz. Dr. Hurburgh, just because this is a very critical point, and Senator Boschwitz has put his finger on it, who pays. I really have to reintroduce for the record your opening example because it really capsulized the testimony that we got for an entire morning a couple weeks ago. U.S. soybeans have 1 percent more foreign material, .5 of a percent less protein, 1.5 percent less oil than Brazilian soybeans. It makes me wonder who some of our people are talking to if we are being told that on a quality basis we are competitive with Brazil when it comes to soybeans. Then you go on to say in your testimony, this combination of quality deficiency translates into roughly 40 to 45 cents per bushel disadvantage for the United States. Now who pays for that? Who is paying for that at this very moment? How much of the market are we losing as a result of that quality? In your testimony, the U.S.A. has lost 20 percent of the Japanese market. What about the world market? How do you respond to that, Mr. Hawk?

Mr. HAWK. Again, I am not a merchant so I do not get involved in the merchandising thing. But——

Senator DASCHLE. Well, but you are telling us that quality does not matter.

Mr. HAWK. No, that is not what——

Senator DASCHLE. And you are saying that quality is not a factor in our international competitiveness. That is what you are saying.

Mr. HAWK. No, Senator, that is not what I am saying. I am saying quality is one of the factors. Price is another factor. And the two have to balance in the eyes of the consumer.

Senator DASCHLE. But, see our witnesses the last time told us that they are able to receive a quality product at a competitive price. That we are the only country that says you have to pay extra for quality if you want it delivered. And that is what is happening here. You have, according to Dr. Hurburgh, 20 percent reduction in the Japanese market as a result of quality. Now, how do

you reconcile that? First of all, where do these figures come from, Dr. Hurburgh?

Dr. HURBURGH. These figures came from a long-term monitoring program on the part of the Japan Oil Processors Association.

Senator DASCHLE. So how would we respond to that, Mr. Hawk or Mr. Curtis, either one? Because that goes to Senator Boschwitz' excellent question, who pays?

Mr. HAWK. The basic premise that we have in the industry, and this is involved in talking to our customers, and again, your witnesses on February 8 said the same thing, they are not willing to pay any more.

Senator DASCHLE. And they are not having trouble getting the quality that they want today. Somebody on the panel correct me if I am wrong. My understanding if you were here at that hearing, what they were telling us is they can get the highest quality at a price that is equal to a marginal quality from the United States. That is what I understood the witnesses to say.

Mr. HAWK. And what we are trying to say, Senator, is that quality is a dynamic, changing problem and what is true today may not be true tomorrow. From a basic standpoint, the customer on a year in and year out basis can come to the United States and get the quality he needs for the price he is willing to pay. And if you want to get back to who is going to pay the cost, if the overseas customer is not going to pay any more, then it has to work its way back down through the marketing chain and the producer is going to be the one that ultimately pays the price.

Senator DASCHLE. Well, Mr. Friehe, tell me something. If you have over one-half of 1 percent foreign material, or you have other defects when you bring the grain in, are you discounted?

Mr. FRIEHE. Absolutely. Dockage, for instance, is deducted in my elevator from the weight of your grain, the total amount of dockage.

Senator DASCHLE. So you are actually paying now if your grain exceeds one-half of 1 percent. Now, Mr. Curtis, tell me what are you allowed as a tolerance as you export your grain?

Mr. FRIEHE. Senator, excuse me.

Senator DASCHLE. Yes, Mr. Friehe.

Mr. FRIEHE. On dockage, we are docked to zero dockage.

Senator DASCHLE. You are docked to zero.

Mr. FRIEHE. Yes, sir.

Senator DASCHLE. You are not even given one-half of 1 percent tolerance?

Mr. FRIEHE. Yes, sir, absolutely.

Senator DASCHLE. Mr. Curtis, what kind of tolerance are you given?

Mr. HAWK. Senator, Mr. Curtis is a soybean and corn person. If you would like me to address the dockage question?

Senator DASCHLE. Sure, either one.

Mr. HAWK. In the case of wheat, the market in general deducts the dockage out from a weight basis so that no one is paying for that material. We have some customers on the export side that take the same advantage. We have others who are willing to take one-half percent nondeductible. So, there again, the price works itself into the market, but it is not a deduction on the quality of

the grain. It is a deduction from weight so that no one is paying for that weight.

Senator DASCHLE. In other words, all this foreign material that somehow finds its way into the international market is just a freebie? Nobody pays for it?

Mr. HAWK. There are costs associated with freight and those kinds of things.

Senator DASCHLE. That is right. Are you not given a 2 percent tolerance?

Mr. HAWK. Not in the case of wheat, no, sir.

Senator DASCHLE. You are given zero tolerance?

Mr. HAWK. As I say, some of our customers take to zero tolerance. Some of them contract with us at one-half percent nondeductible. That is figured into the price, and they are willing to do that. If I might just point out one thing, I think about 2 years ago, we changed to a tenth percent reporting of dockage in wheat and that has significantly reduced the complaints from our export customers, but it has not change the true cleanliness of that wheat as reported by FGIS in their quality reports. And again, the key here is that there is an incentive. Mr. Friehe is saying he is deducted to zero dockage, yet he does not take that dockage out because it apparently is to his advantage to leave it in. I do not understand why because he is deducted to zero dockage, and that carries right on through the marketing chain.

Senator DASCHLE. Dr. Hurburgh, is that correct? Is there no incentive now for the producer? In other words, what I understand Mr. Hawk to be saying is that, really, there is no problem with having foreign material or other kinds of residue in the grain. That is just reflected in the price.

Dr. HURBURGH. Well, sure there are problems. There are operational problems all along the line, insect infestation, lots going out of condition, freight cost, a number of things that are indirect costs. They are not line item type costs, but indirect costs of having foreign material in the grain.

Senator DASCHLE. Correct me if I am wrong, Mr. Hawk, because I do not want to put words in your mouth. But, do you not say to that, well, that just makes our product more competitive? We can sell it for a lower price and thereby become more competitive?

Mr. HAWK. No, what I am trying to say, Senator, is that all these things are considered in the day-to-day decisions of merchandising: price versus quality, and it works itself into that system. Now, you know—

Senator DASCHLE. But what is wrong with that, Dr. Hurburgh?

Dr. HURBURGH. Well, I think we are really debating the issue of whether we are going to act in the collective overall good of everyone or maximize individual handlers' opportunities within the system. And right now the latter is what we do. But I guess I submit that there is opportunity to change the rules that would make the market bigger for everyone in the long-run and then establish a new competitive equilibrium under the new rules, sell a better product and everyone would be better off. That is my view.

Senator DASCHLE. Well, that sounds pretty reasonable to me, Mr. Hawk.

Mr. HAWK. Charlie and I have known each other a long time, and we do not always agree, and this is one of the cases where we do not agree. Our experience in the grain merchandising industry tells us that what he says does not follow.

Senator DASCHLE. But you cannot dispute—

Mr. HAWK. Doing those—

Senator DASCHLE. Excuse me. Go ahead.

Mr. HAWK. Doing those things we do not feel is going to broaden the market or increase the market.

Senator DASCHLE. Were you here at the hearing last time?

Mr. HAWK. Unfortunately, no, sir, I was not.

Senator DASCHLE. OK. At the hearing on February 8, some of our biggest purchasers said, as Senator Bond has already indicated, they had 10 times the complaints with U.S. grain as with any other supplier, 10 times, number one. Number two, they said quality is becoming the dominant factor in determining where they buy grain because all grain is now being sold at a much more competitive price.

With those two things in mind—if it is a quality market that we really want to be shooting for, if it is documented according to Dr. Hurburgh that we are losing the market in Japan and around the world—why would it not be in our best interest to improve quality? As Senator Boschwitz says, it is a question of who pays, and now it appears that we are paying very dearly. Why would it not be in our interest to set the same standards for our grain that are set by every one of our competitors—just like we did in automobiles, like we did in computers, like we have done in just about everything else where we have lost market share in the last 20 years?

Mr. HAWK. My natural instinct is to not back off from this, but as I said, I am not a merchant. What I would like to do is take that question back and submit it to our merchants so that a broader response may be included in the record.

[The response was subsequently provided and follows:]

RESPONSE BY MR. HAWK PERTAINING TO COMPLAINTS AND STANDARDS FOR GRAIN QUALITY-WISE AS ALL OF OUR COMPETITORS

The United States has seen inroads by other suppliers and by other products in what once were steady markets for U.S. soybeans. A number of factors over a number of years are responsible for this development in Japan. However, quality is not foremost on the list.

First, the U.S. embargo of soybeans and other high-protein feedstuffs in the summer of 1973 provided the first reason for foreign buyers—and particularly for the Japanese—to question the United States' reliability as a supplier. It also speeded the development of the South American soybean industry, some of which was financed by Japanese investors.

Furthermore, the embargo was not an isolated event. Within 7 years of that initial embargo, the United States would impose three more embargoes—in 1974, 1975 and again in 1980. Together, they sent a clear message to U.S. customers that the United States should not be relied upon as the sole source of food or feed imports. To other agricultural producers, they provided an opportunity to serve the markets the United States was willing to abandon for foreign policy or domestic political purposes. And so, the competitive nature of today's marketplace was established.

The last major agricultural embargo was lifted in 1981, but that year also marked the enactment of farm legislation unsuited for increased competition, global recession, and a strong dollar. The United States, with our rigid pricing policies, protected competitors' agricultural investments as we lost both exports (measured both in value and volume) and important market share.

In 1985, U.S. policies were changed so that most U.S. farm products could be traded at competitive prices. However, in a bizarre side-effect of that program, production of U.S. oilseeds—including soybeans—was discouraged. As a result, U.S. oilseed acreage has declined dramatically, exports of oilseeds and world market share have fallen, and the domestic oilseed industry has contracted.

Competitors, in contrast, refrained from foreign policy trade sanctions, consistently boosted production, increased market share, and invested in their oilseed industries for the longer term.

Evidence of these phenomena can be seen in the Japanese oilseed market. Sales of U.S. soybeans to Japan peaked in 1982 at 4.87 million tons, equaled that mark in 1986, but have declined since then. Other exporters are serving more of Japan's oilseed needs.

But other factors are at play, as well. Since the mid-1980's, the Japanese have purchased rapeseed in increasing amounts. That choice may be taste related, so U.S. soybeans are likely to face continued keen competition from an alternative product. Ironically, the same policies that discourage U.S. soybean plantings will make it unlikely that U.S. producers can participate in the Japanese canola market.

Another phenomenon occurring in Japan is that country's liberalized policy allowing meat imports. Japanese animal feed is declining somewhat and soybean meal needs also are reduced.

Does the quality of U.S. soybeans fit into the competitive equation? Probably not directly. Quality is not a factor in the quantity of soybeans exported from South America—and neither is price, except to the extent that it directs production decisions. The priority for the South American soybean industry has been to produce a crop large enough to maximize its exports of soybean meal.

Sales of soybeans themselves have been of secondary importance, to avoid unwanted carryover stocks, and so are made at whatever price it takes to avoid a carryout. Relative quality is one of many factors that determine what that price ultimately will be. But of at least equal importance will be worldwide supply/demand conditions, transportation costs and other logistical considerations.

However, as technologies develop and marketing systems become more sophisticated, it could be that South American soybeans, with their higher oil and protein content, will offer a greater relative value to some buyers than U.S. soybeans. But even then, prices will reflect those values.

Soybean oil and protein content are functions of weather, soil conditions and variety. We can do little to control the weather or greatly modify soil conditions but currently we are able to identify highest oil and protein content U.S. soybeans and make them available to customers. In the future, we may be able to do more if we can develop new varieties of soybeans planted here in the United States.

Today, we see little research being done to overcome any quality advantages South American soybeans might have, even though varietal research would directly benefit U.S. growers. Developing soybean varieties that have higher content of oil and protein as well as better yields should be a priority. So should finding ways to lower the costs of producing soybeans in the United States. Increasing the quantity of protein and oil produced from each acre and reducing the per-unit cost of production are worthy long-term objectives.

Improving the intrinsic qualities so that U.S. agricultural products meet customers' needs profitably is something we all should agree on.

On the other hand, grain standards are a point of reference for buyers and sellers. Changing them arbitrarily may be irrelevant to customers' needs and likely would not provide an economic benefit to U.S. agriculture.

Senator DASCHLE. Anybody care to take a shot at it? Dr. Hurburgh, is it a reasonable goal for us to set the same standards quality-wise as all of our competitors?

Dr. HURBURGH. If our competitor will sell a higher quality product at the same price, that is the same situation that is faced by any merchant of a product. He has to improve that product to stay in the marketplace or to retain his or her cut out of that market, and that is a cost of staying in business that I think the United States is going to have to face, if indeed there is a net cost to it.

Senator BOSCHWITZ. Do you need legislation to achieve that, Dr. Hurburgh? If we are going to lose the market unless we come up to their standards, do we need legislation to achieve that or is it going

to be achieved by the marketplace? What is a better regulator of all that?

Senator BOND. I might just offer a thought to my good friend, the Senator from Minnesota, unlike an automobile or a computer where the customer can rely on the initial producer for the quality, it seems that we have accepted a responsibility through our grain inspection system for assuring that quality is recognized in the grades and standards. And I do not see any reason that the regulatory activity of the government lessens the ability to, or impinges on the ability of people to market what they choose to market. But if you had a scale in your store that weighed short and were selling by weight to your customers, an appropriate government regulatory agency would say, wait a minute, you cannot call 14 ounces a pound. And essentially, I would ask Dr. Hurburgh if this proposed legislation merely assures that the ultimate buyer is getting 16 ounces of every pound although it may be quality rather than quantity?

Dr. HURBURGH. The concepts behind the proposed legislation would, indeed, address many of the grain quality concerns of our customers, and in a situation—Senator Boschwitz, let me follow up on your point about the market versus should the government do it. In the grain industry, there are many suppliers, many, many farmers, many, many grain handlers. No one individual alone could afford to take the risk of unilaterally establishing a new set of quality standards for that particular company.

They would be, as many have told me, a dead hero. And that, in my judgment, is sometimes the function of national policy to set the direction so that all of us can be moving in a unified direction without placing undue risk on an individual to stick their neck out where they might get shot down.

Senator DASCHLE. Dr. Hurburgh, is it not also a factor, and I would like to have you—

Senator BOSCHWITZ. May I comment on that?

Senator DASCHLE. Hold on just a second.

Senator BOSCHWITZ. Fine.

Senator DASCHLE. I will use my prerogative as a chairman for just a second to interject something.

Senator BOSCHWITZ. Sure.

Senator DASCHLE. Because it goes direct—it is my best shot in answer to your question, too, which is another good question. And that is, we have a very intricate relationship between the government policies and the private sector in agriculture, unlike we have in just about any other industry. We do not have a research program for automobiles. We do not have an incentive system to produce by volume for automobiles like we have in wheat and feed grains. We do not have allotments and other controls or incentives for cars or computers that we have in agriculture.

There is a very intricate and historical, traditional relationship that has put agriculture in partnership with the government in marketing, in research, in production, in storage, in transportation, in just about every aspect of the agricultural economy. And as a result, to say, well, now when it comes to becoming competitive again, you, the private sector are all on your own, I do not think it

sells. I do not think it is possible because of that intricate relationship.

Senator BOSCHWITZ. May I respond? Let me respond.

Senator DASCHLE. By all means.

Senator BOSCHWITZ. We are supposed to ask them questions, not respond to one another, I guess. [Laughter.]

But nevertheless let me respond if I may. As the Senator from South Dakota knows, I am very aware and have been a very active player in the relationship of agriculture and the government. I am not quite sure that the analogy between computers, and automobiles, and wheat holds. It is hard for me, I must say to the chairman, to hear that there are 10 times as many complaints. Why are they buying from us in the first place? If a quality deficiency translates into 40 to 45 cents per bushel disadvantage for the United States, why are they buying from us in the first place?

I am very aware that between 1970 and 1987 or 1988, the American share of the world soybean market went from 80 percent to 37. Why did we lose that soybean market? Maybe it was because of quality. Maybe that is a part of it. I would submit that the farm program was a part of it, too. The planted acres of soybeans in this country went down by about 10 percent, by about 6, 7 million acres. It went up a little bit after the 1988 disaster bill that we passed, because we gave some of the farmers some options, if you will pardon the phrase, some flexibility in what they could plant.

We lost the soybean market to a large degree because you have to plant corn on your base. Otherwise you would not get the deficiency payment, and not only that, you would lose your base, and if you would lose the base, you would lose the intrinsic value of the land. Your principal asset would be affected. The value of the dollar affected our loss of the soybean market in the world. The Brazilians, the Paraguayans and the Argentines increased their acreage by about 20 million acres or so because we maintained a price floor of \$5.02 for most of the period.

We established the base of the market and encouraged others to produce. I would suggest that that those factors too, played a major part. I would buy Brazilian soybeans if there is a 40 to 45 cent per bushel advantage over the United States. Yes, we may have lost some of the business to Japan. I would say to the chairman a few years ago our exports to Japan of agricultural products was \$6 billion. Today it is \$10 billion. So if we lost one, we have picked it up in something else. That is the way that markets work. My fear with this legislation, with all due respect to my friends from South Dakota and Missouri, is that the standards become more complicated. I want to assure you that, in my judgment, the person least able to defend themselves in the process is the one who is going to wind up paying. I am afraid that will be the farmer and that by establishing a number of new requirements, it is going to work its way back and the farmer is going to pay. It is my understanding that the interest of the farmer is one of the prime concerns of this committee. Certainly I know it is the goal of the Senators from Missouri and South Dakota as well as the Senator from Minnesota. That is more by way of a statement, I would say, than a question.

Senator DASCHLE. Well, you have two farmers here, just for the record, who have advocated support for the legislation.

Dr. Hurburgh.

Dr. HURBURGH. I wanted to comment on the issue of making the standards more complex will create problems. Modern technology promises to enable us to handle more complex programs, more testing problems, more handling problems, segregation problems with a minimum of additional effort. Because we technologically can do things that we could not do 10 or 15 years ago. I would also submit that in general farmers have been very quick to adopt new technologies of various sources, and I guess I am not ready to admit that the 21st century farmer will necessarily be in the weak position with respect to handling technology and complexity.

Senator DASCHLE. Well, I think the panel has done an excellent job of articulating their positions, and if time permits we may call you back at the end of the hearing like we did the last time for a little more of a roundtable discussion with some of the other witnesses. We will see how the schedule works out. But again, I want to thank you all. You have certainly done this committee a service, and we appreciate your coming such great distances to be here, and you are now excused.

Our second panel is comprised of Reggie Wyckoff, the past president and chairman of the Wheat Quality Committee of the National Association of Wheat Growers; Loren Doll, the chairman of Irsik & Doll Feed Services in Dodge City, Kansas; and Terry Detrick on behalf of the National Farmers Union, a farmer and vice president of the Oklahoma Farmers Union in Ames, Oklahoma.

Gentlemen, we are very pleased you could be with us. Thank you for coming. Mr. Wyckoff, since you are closest here, would you begin please.

STATEMENT OF REGGIE WYCKOFF, PAST PRESIDENT AND CHAIRMAN OF WHEAT QUALITY COMMITTEE, THE NATIONAL ASSOCIATION OF WHEAT GROWERS, GENOA, CO

Mr. WYCKOFF. Mr. Chairman, members of the committee, my name is Reggie Wyckoff. I am the immediate past president of the National Association of Wheat Growers, and chairman of the association's Grain Quality Committee. I have been an ongoing participant in the industry-wide Grain Quality Workshops and the Federal Grain Inspection Service Working Group on Wheat Classification from 1986 to present. However, my best understanding of the importance of grain quality comes from being a wheat producer. My family and I operate a dryland wheat farm near Genoa, Colorado.

I will summarize my comments, and would ask that my full comments appear in the committee record.

Senator DASCHLE. Without objection.

GENERALLY SUPPORTIVE OF THE GOALS SET FORTH IN S. 1977

Mr. WYCKOFF. I am generally supportive of the goals set forth in S. 1977. In fact, there are sections of the bill that I believe would help to ensure that the U.S. grain will always meet the world market's dual demands of both price and quality. However, there are other sections of S. 1977, which without modification, would place

greater burdens than benefits upon the livelihood of wheat farmers.

DISAPPOINTED THAT NO ONE REALLY DIFFERENTIATES BETWEEN CLEANLINESS AND INTRINSIC QUALITY

In reviewing the testimony and hearing the testimony this morning, I am disappointed that no one really differentiates between cleanliness and intrinsic quality. Historically, when people have criticized the quality of our product, wheat, they actually have been expressing their concern regarding the cleanliness of the grain—generally the level of dockage and foreign material.

Unfortunately, a perception has developed that farmers only need to do a better job of harvesting their crop and grain cleanliness problems will be solved! However, the purpose of the farmer's combine is to harvest grain, and there are limitations on its ability to act as a grain cleaner. Furthermore, onfarm grain cleaners are costly and have their limitations. This fall I cleaned every bushel of grain I produced and was still only able to lower my level of dockage to seven-tenths of a percent.

GRAIN QUALITY WORKSHOPS

I mentioned earlier that I have been a participant in the industry-wide Grain Quality Workshops. In the case of wheat, the workshop process has been remarkably successful. The workshops have been responsible for providing FGIS with direction on several major changes in the wheat standards: the reporting of wheat dockage to the nearest tenth of a percent, the standardization of protein measurement and moisture meters, and the tightening of insect damage allowances. The Grain Quality Workshops were also integrally involved in the evolution of the regulations to prohibit the blending or reintroduction of foreign material and dust back into the grain.

ECONOMIC IMPACT

However, not one of these changes has come without an economic impact. What is perhaps the most important part of S. 1977 is a section [title I, section 102] calling for the costs and benefits study of changes in the grain standards. I am firmly convinced that for the benefit of farmers, a cost-benefit study should be conducted in full before any major changes in rulemaking could be proposed or changed in the standards.

LOADING PLAN

While FGIS is expected to release a revised loading plan in the upcoming weeks, I am yet to be convinced that it will be unbiased to both buyer and seller. In the case of wheat, the implementation of a revised, unbiased, shiplot inspection plan should improve customer satisfaction in the case of multiple destination shipments. Although FGIS is developing the ability to test for chemicals and mycotoxin residues, there is clearly a need for a greater commitment. This is important not only to ensure a safe and wholesome product, but also to gauge more accurately our food safety and

chemical residue standards against internationally accepted and adopted codes.

THE GRAIN QUALITY INCENTIVES ACT

The Grain Quality Incentives Act also tackles the need for greater coordination on quality concerns between agencies both within and outside of USDA. In fact, the National Association of Wheat Growers would encourage you to expand this section to include a study of the interrelationships involved among the FGIS, APHIS, FDA and OSHA. Such a study should include recommendations for streamlining the grain inspection and certification process.

The hearing you conducted 2 weeks ago illustrated a concern which I have long held that it is difficult to estimate the effectiveness of the existing grain quality revisions due to the inadequacies of the complaint system. I firmly believe that our existing grain standards do not need to be changed as much as our system for handling and resolving grain quality complaints needs to be overhauled.

THE STRONGEST FEAR EXPRESSED BY FARMERS OF S. 1977

The strongest fear expressed by farmers of S. 1977 is that grain standard changes will be established by legislation that are impossible to meet without adversely impacting the livelihood of wheat producers. While a goal of requiring that U.S. grain standards match the standards of our export competitors is laudable, any gain may be negligible compared to the cost. Neither the American producer, grain merchant, nor end-use appear willing to accept the level of intervention and regulation of the industry that is necessary to meet the Canadian standards.

SUMMARY

In summary, I have great respect for the personal commitment Senators Daschle and Bond have exhibited toward addressing the grain quality issue. On behalf of the members of NAWG, we look forward to working with you on the legislative redraft of the Grain Quality Competitiveness Act of 1989. Again, thank you.

Senator DASCHLE. Thank you, Mr. Wyckoff. Mr. Doll.

[The prepared statement of Mr. Wyckoff appears at the conclusion of the hearing.]

STATEMENT OF LOREN DOLL, PRESIDENT, IRSIK & DOLL FEED SERVICES, INC., DODGE CITY, KS

Mr. DOLL. My name is Loren Doll, I am president of Irsik & Doll Feed Services, a family corporation engaged in operating grain elevators and cattle feeding facilities in western and central Kansas. We appreciate the opportunity to speak to this body, an opportunity that comes very seldom.

GRADING OF FEED GRAINS DOES NOT PRESENT A PROBLEM FOR US

Our elevators handle wheat and feed grains received from farmers. Feed grains are consumed in the feed yards where we use up to 1 million bushels per month. Grading of feed grains does not present a problem for us. We are an end-user with any unfit grain

being refused. It finds its way to other feeders or is converted to alcohol in one of the several processing plants in Kansas.

THE PROBLEM EXISTS WITH THE MARKETING OF HARD RED WINTER WHEAT

The problem exists with the marketing of Hard Red Winter wheat. In a good year, Kansas will raise up to 400 million bushels, being some 20 percent of the 2 billion bushels of all classes raised in the United States. Kansas is the leading wheat producing State in the Nation, also the leading State in flour milling. Domestic mills are able to pick and choose quality wheat that is offered daily on the markets. The supply is more than adequate. We do the same in our cattle feeding operations. No complaints are voiced regarding quality by domestic flour millers. They simply will not buy low quality, unclean wheat. An example is the IDK count. That is insect damaged kernels. It is not a grading factor but of major importance to a flour mill.

IDK COUNT

We find domestic mills will rarely accept wheat that has an IDK count over five, meaning five insect damaged kernels per 1,000 grams. Yet wheat can have up to 32 insect damaged kernels and not affect its U.S. grade. The higher count wheat is channeled to export markets. To control insects, it is the practice of exporters to fumigate wheat with phosphine gas while on a ship destined to an overseas buyer. This very fact demonstrates our grain industry does not fully control infestation in our magnificent but obsolete storage warehouses. Foreign buyers are as knowledgeable as U.S. buyers, perhaps more so. The best flour milling equipment used in the United States originates in Germany and Italy.

GRADING SYSTEM

I wonder who we are trying to deceive by offering our wheat under a grading system that is woefully inadequate.

SEVERAL MYTHS OF QUALITY

Peter Drucker, the noted management consultant, identifies several myths of quality. One, quality is intangible and therefore not measurable; two, there is an economics of quality. An example is we cannot afford it. Three, quality problems are originated by the worker. These myths concerning quality, specifically wheat quality, are untrue.

QUALITY

Philip Crosby, a quality consultant, defines quality as conformance to requirements. If a product, such as wheat, conforms to all of its requirements it is a quality product.

Tom Peters, in his books on excellence, states that every person involved in a product must be committed to quality. So I have to ask how can wheat producers be committed to high quality knowing full well that our product is blended and manipulated to just barely pass the inadequate standards before being offered to a foreign buyer?

"FINEST WHEAT" PROGRAM

A year ago our company embarked on a "Finest Wheat" program. We offered an incentive payment to farmers who delivered clean, high quality wheat to our elevators. The program was well received by producers. It made them more aware of proper setting on harvesting equipment and resulted in one-third of wheat receipts being eligible for incentive payments.

U.S. STANDARDS ARE NOT ADEQUATE FOR THE SOPHISTICATED BUYER

Our plan is to offer clean, high quality wheat in quantity to importers. We realize our efforts are minute compared to what is needed by the industry as a whole. But the buyer must be satisfied. U.S. standards are not adequate for the sophisticated buyer. The improvements made the past few years are notable. But they are not adequate. I feel farmer producers are ready for more stringent grain tolerances and the effort on them would be in my opinion minimal. They and we in the elevator industry must have all possible world-wide markets to move our product. Today's U.S. grain standards effectively remove potential buyers from bidding on our wheat production. Our inadequate grain standards have been self-defeating. The regulatory process that is relied upon has not resulted in a quality product.

Our industry has not strived for excellence. It appears the necessary excellence will require legislation, and we endorse the act now under consideration. Thank you.

Senator DASCHLE. Thank you, Mr. Doll. Mr. Detrick.

[The prepared statement of Mr. Doll appears at the conclusion of the hearing.]

STATEMENT OF TERRY DETRICK, VICE PRESIDENT, OKLAHOMA FARMERS UNION, AMES, OK, TESTIFYING ON BEHALF OF THE NATIONAL FARMERS UNION

Mr. DETRICK. Thank you, Mr. Chairman. My name is Terry Detrick, and I am the vice president of Oklahoma Farmers Union and a wheat producer, farming just southwest of Enid, Oklahoma. I'm here today representing National Farmers Union as I do on the Wheat Classification Working Group. National Farmers Union is a grassroots, general purpose, farm organization with over 300,000 family memberships, including many grain farmers.

I would like to request acceptance of our written testimony and use my time for oral testimony this morning, summarizing my prepared statement and offering some reasoning for our position. Many of my remarks will be the result of my exposure to the wheat industry.

THANK YOU FOR THE OPPORTUNITY TO ADDRESS THE SUBJECT OF GRAIN QUALITY

I would like to begin by thanking you for this opportunity to address such an important subject as grain quality. It is a very important factor affecting our United States exports. We must always remain competitive from every angle.

I would also like to add that being from a part of Oklahoma where farmer owned cooperatives are numerous and where farmers have a chance to sit as boards of directors and help determine their own destiny, I am not faced with some of the inequities I am told exist where there is opportunity for biased grading.

THE PROFIT LINE

The profit line for the producer, the handler, the shipper, the exporter, and the buyer is what governs our free enterprise system and also affects the economic well-being of the entire United States. Consequently, there must be concern for the entire industry. Because of this, I would like to say that it is unclear to me the meaning of the language in title IX, section 902, new subsection (k) (S. 1977, pp. 24-25) stating that only high quality clean grain shall be stored under the proposed provisions of the producer storage program. Clean grain could be interpreted to mean grain which has been cleaned. Whether that was the intent of this bill or not, I think it is appropriate to say that if we ever do have to clean our grain to compete on the world market, the expense of doing that will have to come from the marketplace because there is not now that kind of margin for the producer.

DEFINITION OF QUALITY

In our prepared testimony much mention is made about quality, research, blending and pricing. When the National Cereal Chemists Association met in San Antonio approximately 2 years ago, the focus of that meeting was on the definition of quality from the perspectives of different areas of the industry. A Japanese importer, a domestic baker, marketer, chemist and others in the industry, all seem to have varying ideas of what quality really was depending upon the needs of their own particular interests. But this statement was made which I don't believe anyone could argue with: "As beauty is in the eye of the beholder, so quality is determined by the consumer and what moves in the marketplace."

GRAIN QUALITY IS NEVER BETTER THAN WHAT IS PRODUCED

Grain quality is never better than what is produced. Producers will furnish the market with whatever it is willing to pay for. Different segments of the market ask for different characteristics to satisfy their need. Consequently, much will need to be invested in research to identify what the marketplace determines to be quality and these favorable characteristics will need to be made known to the breeders and producers to be able to produce quality. More research is also needed to aid in the hardness classification of wheat.

THE CURRENT FARM POLICY DISCOURAGES QUALITY PRODUCTION BY BASING EVERYTHING ON ACRES

At this point, I think it appropriate to mention that the current farm policy discourages quality production by basing everything on acres. Consequently, producers shoot for quantity per acre and why not? It is to their advantage. On the other hand, if our government allotments were in bushels, then producers would be encouraged to produce for quality and a premium per bushel.

Blending and pricing, we feel, should go hand in hand. I am told that 99.7 percent of our export wheat goes No. 2 or better, and since most of our export wheat is usually tendered at No. 2 or better, and since grades No. 1, No. 2 and No. 3 are blended to achieve this, we feel that pricing at the country elevator should be based on No. 2 with a premium paid for No. 1 wheat and a discount for No. 3 wheat. We recommend that nothing below No. 3 be allowed to be blended at all.

Thank you for allowing us to present our views today.

[The prepared statement of Mr. Detrick appears at the conclusion of the hearing.]

Senator DASCHLE. Thank you, Mr. Detrick.

Senator BOND.

Senator BOND. Thank you, Mr. Chairman. I was interested in Mr. Doll's comments about the quality program and the incentives that he has established. Mr. Doll, what kind of premium is realized for the No. 1 grade or the best grade wheat that you get?

Mr. DOLL. You mean when we go to move the grain?

Senator BOND. Well, what does the farmer get for instance?

Mr. DOLL. Three cents a bushel.

Senator BOND. What do your farmers say about the cost of meeting this standard?

Mr. DOLL. Of getting higher quality wheat, more clean wheat, the 3 cents, really it is not that significant. They can leave that much in their fields. But I think to me our farmers—I have dealt with the farmers all my life—they have a sense of pride. They want to do the best job possible. And that little 3 cent premium has really acted as an incentive to them. And it made a difference on the wheat that was received by our elevators this past year.

Senator BOND. If the premium is nominal, would you say that the extra effort to provide that quality is not a significant economic disincentive?

Mr. DOLL. I do not think so. I think that they need some type of incentive payment. I think that it has to be, you know, we talk dockage. We talk about taking away from the price that is posted on the board, but I think there needs to be some type of payment if the stuff is, in fact, better quality than average.

Senator BOND. Mr. Detrick, in your oral statement, and in your written statement also, I was impressed when you stated that we currently discourage quality. We discourage quality because we have incentives for quantity. You spoke of the cost to the American farmer of correcting the grain quality problem. How significant do you think these costs will be?

Mr. DETRICK. Well, I think it depends on how far we have to go. If we have to clean wheat, I agree with testimony that has already been made here this morning. That always trickles its way down to the bottom, and we have no place else to go with it. The cost to clean a bushel of wheat varies depending upon how thoroughly you have to clean it. We had a year at our local elevator that we had lots of cheat problems, and it was easy for our elevator manager to set up a wind system that—

Senator BOSCHWITZ. What kind of problems?

Mr. DETRICK. Just a fan, a wind system.

Senator BOSCHWITZ. Cheat?

Mr. DETRICK. Cheat, C-H-E-A-T, a cheat problem in our wheat. The cheat grass has a very light seed, and he was able to set up a wind system to blow that out. He had cattle feed made from it, and we were able, then, to use that locally as part of the feed program. He sold good wheat. Most of the wheat that leaves our elevator year in and year out is normally No. 1 wheat. Our pricing is on No. 1. Anything less than No. 1 wheat, then we are docked, sometimes in more than one way.

Senator BOND. Mr. Wyckoff, I gather that you hold a different view from the other panelists, and perhaps from what we have heard from purchasers from Belgium and from the Soviet Union last week. Do you think it is adequate for us to study the situation with respect to grain quality, and then if we find that the costs are too great, we should not attempt to do anything further on grain quality?

Mr. WYCKOFF. No, I do not believe that. I believe the biggest problem we have with the cleanliness of wheat is with dockage. I do not believe that Canadian wheat is any better than U.S. wheat. In most cases, especially with regard to European wheat, U.S. wheat is far superior in its quality and intrinsic values. But we do export dirtier wheat.

We believe we need taxpayer assistance to help us clean wheat for export. There simply isn't any farmer money out there. As Mr. Detrick said, there is no profit for farmers in cleaning wheat. We need long-term, low-interest money to help us clean wheat for export since exports are our lifeblood. In my own case, every bushel of my wheat—except for the little that goes to a domestic flour mill—goes directly to port.

Senator BOND. Mr. Wyckoff, I would have to say that given the budget constraints under which we operate, the chances that we are going to start a new program to clean wheat and pay for quality improvements in the production sector are not great. Let me refer you to a farmer survey conducted by the Farm Journal. Among the respondents to the survey, 91 percent felt that cleanliness was an important competitive factor.

Mr. WYCKOFF. I believe that.

Senator BOND. They said that U.S. standards on cleanliness should be tightened. Would your members agree with that statement or disagree?

Mr. WYCKOFF. Our membership has supported the changes recommended by the Grain Quality Workshops. But when a change is instituted, no one ever calls me to thank me for helping to get those changes. Rather, what I hear is, "You cost me money."

It is easy for us to go along with proposed changes, to give our support. But when the costs of the changes are felt by the farmer, things get a little harder. I don't know how you can change the FGIS standards for cleanliness because cleanliness currently is not part of the standard, unless you want to make it a part.

Senator BOND. Would you advocate that?

Mr. WYCKOFF. No. Dockage is discounted. But there is little incentive for the farmer to deliver cleaner wheat. Currently, there is a 2-cent premium for delivering No. 1 wheat. We need more than that.

Senator BOND. Do you think perhaps the absence of calls when the United States loses markets or when we lose out as some of our foreign purchasers have suggested to Canada, Australia, do you think that those calls probably do not come because no farmer is actually there and sees it? But if we lose market share, would you agree that that does have an—

Mr. WYCKOFF. Oh, yes.

Senator BOND [continuing]. Effect on the return that the farmer receives?

Mr. WYCKOFF. Of course it does. But my question is, if Australian and Canadian wheat has so much value to overseas customers, why do the Canadians feel they have to undersell us in the export market? If our wheat is so bad, why do they undersell us?

Senator BOND. Let's ask the other panelists if they would like to comment on that.

Senator DASCHLE. Mr. Doll, do you have a—

Mr. DOLL. Canadian wheat is mainly Hard Red Spring wheat as I understand it. There are certain times when that is desirable, usually its protein content is quite important. Hard Red Spring is not used in many instances where, say, Soft Red and some of the other classes that are produced in the United States are used. So where they have to undersell us, I would like to see documentation on that. Like for our Hard Red Spring compared to their Hard Red Spring, depending on what the marketplace is calling for.

Senator BOND. Mr. Detrick, do you have a comment on that?

Mr. DETRICK. I would just say that I think when we talk about the buyers buying, the most they can get for their buck. In Canada they have the Hard Red Spring wheat. They may have to windrow to dry the grain. By the time they pick up the windrows with a harvester, the weed seeds and all the foreign matter is dry. It goes right in with the wheat. They almost have to clean the wheat to make it marketable. When they get through they have No. 1 wheat. Then they have to put that on the world market. They do not have as much No. 2 or No. 3, I would not imagine, as we may have in the lower States.

If a buyer can buy that quality of wheat in the world market for roughly the same price or with a very little increase in price, the Canadian Government or their wheat board, somewhere in that chain, that cost of cleaning is absorbed and they are probably the loser for it.

Senator BOND. Thank you, Mr. Chairman.

Senator DASCHLE. I am told, just for the record, that the reports that we have in the committee are that it is about 50/50. We undersell them about the same amount as they undersell us. Mr. Wyckoff is that your understanding?

Mr. WYCKOFF. Yes. You know, not in all cases they undersell us.

Senator DASCHLE. But I am told, and I would be interested in your—before we go to Senator Boschwitz—is it not true, and this is a question, not a statement. Is it not true that Australia and Canadian wheat largely has better consistency and better uniformity than does U.S. wheat?

Mr. WYCKOFF. Well, I suppose that it would, Senator, because they have less varieties and they have—it is grown in tighter—

Senator DASCHLE. There are good reasons for it?

Mr. WYCKOFF. Right.

Senator DASCHLE. But you said on a kernel for kernel basis, our quality is identical to theirs. And I think at least from a uniformity and a consistency point of view, it is probably not accurate to say that. I mean clearly they have a supreme advantage over us on cleanliness, but even on quality, at least if you consider consistency and uniformity as two dimensions of quality, they outdo us there, too, for some of the reasons you have mentioned.

Mr. WYCKOFF. Right. Well, they grow it over a smaller area and less varieties.

Senator DASCHLE. That is right.

Mr. WYCKOFF. But we can match that.

Senator DASCHLE. We can if we want to. We do not, but we can. Senator BOSCHWITZ.

Senator BOSCHWITZ. I was quite impressed with the definition of quality by both Mr. Doll and Mr. Detrick. Mr. Detrick said beauty is in the eye of the beholder, which is true. Mr. Doll said more or less the same thing. Some of the books about excellence which I have read say the same thing as well. I was also very impressed, Mr. Doll, with your testimony in that one-third of the wheat that you received got the premium. And you said in your testimony that it did not take the farmer much added effort to get that premium. From what grade to what grade did the wheat go may I ask?

Mr. DOLL. Well, I do not know if you are aware of it, but this past year in Kansas we had a very poor wheat crop.

Senator BOSCHWITZ. Yes.

Mr. DOLL. About 200 million bushels, roughly half of a normal crop. Our best wheat was raised in the areas farther west in the State.

Senator BOSCHWITZ. Where is Cimarron?

Mr. DOLL. It is just west of Dodge City. It is in western Kansas, just near Dodge City, Kansas. But what we did, the way we checked it, mainly we checked it for cleanliness. We, being the crop was, you know, we got quite a little light test weight wheat, 56, 7 pound weight, but it was extremely clean. This was probably a cleanliness test. We used a small aspirator to run samples through to check it for shrunken, broken, and so forth.

Senator BOSCHWITZ. What did it cost the farmer to improve his quality to get the 3 cents? Do you think it cost him more, or less, or about the same?

Mr. DOLL. There was probably a minimal cost if he went out and readjusted his combine a little bit. Instead of bringing it to town, he left it in his field, some of the fines and forth, cracked gains and dockage and that sort.

Senator BOSCHWITZ. That means he left 1 percent of it in the field because 3 cents is a little less than 1 percent of the value, I guess.

Mr. DOLL. We would pay this premium on wheat that had liftings of less than one-half of 1 percent. Anything over that, we would not pay the premium. If wheat was over 1 percent liftings, we took a dockage.

Senator BOSCHWITZ. If I thought that the whole business could be easily achieved and that grain quality could be easily raised, and perhaps it can be with a minimum amount of work, I would be

very supportive of the legislation that my friends from South Dakota and Missouri have introduced. And I may still be. I just want to raise the questions, and I want to make sure that the constituencies I have an interest in are represented. I must tell you, I sometimes have some problems with understanding how other countries, who have infrastructures that are primitive by comparison to ours and have to handle grain much more frequently and much more energetically, are so good about shipping out all this first-class stuff.

Did you get the 3 cents back incidentally when you sold it?

Mr. DOLL. I think so. We—

Senator BOSCHWITZ. One second now. Did you get the 3 cents back when you sold it?

Mr. DOLL. Yes. We, our sales this year were mostly to domestic mills. When we would take this wheat and we would offer it to domestic mills, and each carload of wheat would have these specific qualities: it would have a low IDK count. It was not blended with something else. It more than exceeded the grades that we said that it would. I mean it exceeded the minimum tolerances in that. And we more than got back the premiums we paid out.

Senator BOSCHWITZ. Well, that is very impressive. If you can improve grain standards for a nominal amount and get it back, then my viewpoint on it may be a little bit different. I agree, you know, with Mr. Detrick that it most likely will come from the market. No, Mr. Detrick said it will have to come from the marketplace because the producer is pressed and that the farmer is encouraged to produce by our present farm programs, which I very much agree with, and not to stress quality. Perhaps these gentlemen are on the right track, that the loans should not be predicated simply on volume but on something else.

However, I am cautious about all of this. It will have to come from the marketplace you said because the producer is pressed. A little later on in your testimony you said that it does come down to the lowest common denominator. I would never use that kind of language to describe farmers, of course, as the lowest common denominator. It is not unlikely to go back to the beginning and I agreed with your comments on that as well. I found the statements most interesting and helpful.

Mr. Wyckoff, I see, takes some of my views in this whole business. Unfortunately, even the most well intentioned legislative changes in grain standards could have an adverse impact. An additional 5-cent cost to the farmers to clean grain or an additional 10 cents dockage at delivery translates into millions of dollars in lost farm income.

That is, Mr. Chairman, what I am going to try to prevent and, once again, I say to you that I look forward to an early report on the parts of your bill that require the cost-benefit type of study to occur. Mr. Chairman, I am going to have to leave, regretfully, and I notice that in the next panel there is an omission, perhaps unintended, and that is that the grain millers are not represented, and I would ask unanimous consent that, in the event they want to submit written testimony, they be allowed to do so.

Senator DASCHLE. By all means. We want to hear from as many different sources as we can, and that is an excellent suggestion.

Senator BOSCHWITZ. Fine. Thank you very much. I thank the chairman and I think that we will work on this legislation in a manner to protect the interests of all concerned. Thank you.

Senator DASCHLE. Thank you, Senator Boschwitz.

Mr. Doll, would you care to address that very legitimate concern expressed not only by Mr. Wyckoff, but by others, that changes in grain standards could have a similar though adverse impact; an additional 5 cent per bushel cost to the farmer to clean grain, or an additional 10 cent discount, which translates into millions of dollars of lost farm income? That sounds like a very ominous impact if that is what would happen as a result of this legislation.

You deal with the grain business on a daily basis. You have even tried to experiment with ways in which to handle, clean, and deliver high quality grain in a sort of nontraditional manner. How would you address that concern?

Mr. DOLL. Well, I think the overriding concern has to be that we must furnish a quality product. We have to have the best product that we can make available. Every salesman has to have complete faith that his product is better than anyone else. We do not have that confidence in wheat that we are trying to promote in other overseas markets. U.S. Wheat Associates and other promotion groups do not have the motivation to do the best job because you do not have the best product there is available. It would be like selling a second-rate automobile or something.

But I think as far as the cost of this thing, and you can study this thing forever and ever, and it will never be determined who will actually pay that cost, but I think we have to consider that we have to have a first-class product to offer, and then whether the exporters, they claim their margins are narrow, and you go way back to the farmer. Well, I think farmers in my area are willing to gamble that they may end up with part of it, part of the cost of it, but they are also subject to other things that are much more risky to them, like the weather, the interest rates that bounce around for no reason that they can ascertain that costs them money. But this is something that really affects their pocketbook, and I think people in western Kansas are ready for clean grain, clean, high quality grain legislation.

Senator DASCHLE. One of the real goals of this legislation, obviously, is to try to attain the same performance levels internationally that other countries have already met. Mr. Wyckoff, is that a worthy objective in your opinion?

Mr. WYCKOFF. I think it will be difficult. If we try to match the Canadians, that means we will need to get our dockage down to a level of .2 percent. There is no way to do this without cleaning our wheat. While I am not against this, I do feel that the cleaning needs to be done at the right place.

Senator DASCHLE. So, do I hear your answer to be that, while it would be difficult, it is a laudable goal and an achievable objective?

Mr. WYCKOFF. Well, if we have to do that to be able to maintain our export markets, then that is what we need to do. But I do not think we need to go to that extent to maintain those markets yet. But maybe this economic study that you do, maybe that will show that.

Senator DASCHLE. Mr. Doll, do you think we need to go to that extent? That is, the extent to which we have to compete, by reaching the standards set internationally for clean grain today?

Mr. DOLL. I think that a lofty goal such as that, to be comparable to other exporting nations, I do not think that is any goal at all. We ought to be superior to those people, to other exporters. We should be No. 1. I mean what is this country about? Excellence? We ought to be able to furnish a better product than our competition. That is what competition is about, not just meet their standards, exceed their standards.

Senator DASCHLE. Can we be No. 1, Mr. Wyckoff?

Mr. WYCKOFF. Well, you are No. 1 as far as volume.

Senator DASCHLE. Well, what about that, Mr. Doll? That is a pretty good answer.

Mr. DOLL. Volume. Well, what is volume if not quality and volume? If you could excel in both those, would not that be great? I mean that would be great, but we are sacrificing quality for volume, and I think it comes back to where it is hurting the American producer who we are so concerned about paying the bill for cleaning wheat. I think he is ready and willing to pay his share.

I mentioned these obsolete elevators in my little talk here. Most elevators in the Plains were built in the 1950's. That is when the Government would guarantee storage income. You could write them off in 5 years. You could pay for an elevator in 5 years, no sweat. They have not been improved. They have not been improved to take better care of grain. Maybe they put faster legs in them to move the grain faster through them, handle more quantity, not quality.

Senator DASCHLE. Well, it does seem to me, obviously, Mr. Doll hits many of the nails right on the head, as far as I am concerned. It is not meant to be a question as much as a comment. I would like to see our country No. 1. I would like to see our country stand for something other than the bargain basement dealer out there saying come to dirty old Uncle Sam and he has got a deal for you as he chews on his cigar and sells you another bushel of dirty grain.

That is not the perception internationally that I stand for. South Dakota is probably no different than Kansas or anyplace else, but there was a time when my father told me that if you wanted to put your name on something, it ought to be something you are proud of. I do not take much pride in saying we sell more than everybody else if it is not high quality.

I could probably paint a thousand pictures, but none would be as good as the painting hanging on that wall at the back of the hearing room because that painting is high quality.

Likewise, I am not sure that we are on the right path when it comes to setting agricultural trade policy if our only goal is to be just the bargain basement volume dealer. There are volume dealers around Washington where I would not even walk in the door. They probably deal with more volume than somebody who represents quality down the street. That is really our choice here, it seems to me. Do we put our name on it or do we become the broad-based, volume, bargain basement dealer. And that is really what we are trying to decide.

I do not want to mandate anything. I do not want to force people to do something they do not want to do. But it seems to me that the producers, the traders, the Government, the consumers, everybody benefits if we would put a greater emphasis on quality.

Is there any final comment of the three panelists? Yes, Mr. Detrick.

Mr. DETRICK. I would have one, Senator. I ditto your comments. I do not think there is anyone that is more proud of what they raise than the American farmer. I do not think there is anybody that wants to be better or wants to be the best more than the American farmer. I think the American producer has been conditioned for many years to produce for the Government, not for the marketplace, produce for the program, quantity, all pays the same roughly. I would like to correct the record also to prevent a lynching when I get home. I do not, if I did, I did not intend to refer to the producers as the lowest common denominator. As Senator Boschwitz, I think if he will examine my wording, I think I used the lower end of the chain, meaning that there is nowhere else to pass this on to in regard to the cost. Thank you.

Senator DASCHLE. OK. Mr. Wyckoff.

Mr. WYCKOFF. Several years ago, a baker told me they did not use Colorado wheat because of problems in the bakery. I tried for over a year, without success, to get him to be more specific. I finally asked another baker about Colorado wheat and he told me the problem was that some of our varieties have a very short mix time.

I asked the largest State flour mill in Colorado this question: If we plant another variety that has a longer mixing time but which produces 10 percent fewer bushels, would they be willing to buy it at a 10-percent premium? The mill said no. They said it is the farmer's job to produce the bushels and their job to figure out how to use them.

Senator DASCHLE. Well, you are dealing with the framework. It goes to Mr. Detrick's point. I mean we have created a framework where quality is not the most important factor, and you cannot blame producers or anybody in this room for responding to the system that we created. Is it now time for us to create a new system that represents probably a little more reality than we are used to dealing with today? I do not think we are dealing with reality today. It seems to me from what I hear our customers saying, what I hear many of the people involved in the trade saying, is that quality is going to matter more than it used to.

Under this more realistic condition, we are not going to be able to compete effectively. Take away the pride question. Take away what America ought to stand for. Just in hard dollars and cents, are we going to be able to be competitive in the future if our customers can produce a quality product at a competitive price and we cannot? That is the dollar and cents question. What I am hearing is that, no, we are not going to be able to compete effectively. We will always be able to deal—there will probably be a market out there for something—but is that what we want? Can we redesign the system to allow us to respond more effectively?

What you are saying, Mr. Wyckoff, is let us study it and find out. What I hear other witnesses saying is that, well, maybe we do not have all the answers, but it is time that we start implementing

some of these things because we have enough answers upon which to make some fundamental decisions. Would you disagree with that?

Mr. WYCKOFF. I do not want to see changes in our grain standards if we have nothing but a hope that these changes will create a higher quality product. If we make changes in this system, we should be certain these changes will be both necessary and correct. If we are wrong, if we simply experiment, it will be costly to farmers.

Senator DASCHLE. Well, I think you can take analogous cases in other countries, find out what it is they are doing, not necessarily adopt them but learn from them. I do not know that anything in this world is 100 percent, and you representing the agricultural industry are more sensitive to that than probably anybody else. You know that nothing is 100 percent. We also know if everybody else is doing something, and that is what our customers are demanding and we can create a framework within which to accomplish those goals, that there is a pretty good chance, a better than even chance and probably even a 90 percent chance that we are going to be right. We are going to hit a bull's-eye. To try to get that additional 10 percent of certainty may not be in our best interest. And I am sure that we agree on that.

Mr. WYCKOFF. Well, I just do not want to be experimenting.

Senator DASCHLE. Right. Nor do I.

Mr. WYCKOFF. OK.

Senator DASCHLE. Thank you all very much.

Our third panel consists of Randy Marten, representing the American Bakers Association, Retail Bakers of America and the Biscuit and Cracker Manufacturers; Dr. Fred Cholick of the National Wheat Improvement Committee; and Andrew Whisenhunt, American Farm Bureau.

Mr. Marten, we are delighted that you could be with us this morning. You have heard a lot of the comments already. You are welcome to modify your testimony in any way you see fit, if you find the need. But the testimony that you submit will be inserted in the record in full, and we invite you to proceed as you see fit.

STATEMENT OF RANDY MARTEN, VICE PRESIDENT FOR MATERIALS ACQUISITION AND TRANSPORTATION, CAMPBELL TAGGART INC., DALLAS, TX, TESTIFYING ON BEHALF OF THE AMERICAN BAKERS ASSOCIATION, THE BISCUIT AND CRACKER MANUFACTURERS ASSOCIATION, AND THE RETAIL BAKERS OF AMERICA

Mr. MARTEN. Thank you. Good morning.

OUR ASSOCIATIONS REPRESENT COMPANIES THAT PRODUCE APPROXIMATELY 80 PERCENT OF ALL U.S. BAKERY PRODUCTS

My name is Randy Marten. I am vice president for materials acquisition and transportation for Campbell Taggart Inc. I am here today on behalf of the American Bakers Association, the Biscuit and Cracker Manufacturers Association, and the Retail Bakers of America. Together, our associations represent companies that produce approximately 80 percent of all U.S. bakery products. The

U.S. baking industry transforms more than 300 million hundred-weight of flour, made from nearly 700 million bushels of wheat into a wide variety of bakery products each year.

GRAIN QUALITY INCENTIVES ACT OF 1989

We commend Senator Daschle, Senator Bond, and others for introducing the Grain Quality Incentives Act of 1989. Most sections of the bill are directed toward the improvement of grain quality and cleanliness in order to compete more vigorously in world markets. We support that objective. We wish to call the committee's attention to the fact that for wheat, quality requirements in respect to eventual end-uses of the grain are increasingly similar for export and domestic markets. Physical soundness and purity are important criteria for wheat quality. But it is the end-use characteristics that is critical to efficiently and consistently producing baked products desired by all consumers worldwide.

CONCERN ABOUT THE BAKING PERFORMANCE OF NEW WHEAT VARIETIES

Our concern about the baking performance of new wheat varieties is heightened by recent developments in plant breeding technology. A few wheat varieties brought from Russia and Turkey dominated U.S. Hard Winter wheat production from the late 19th century to about 1940. Since then, dozens of new varieties have been developed, released, improved, and then superseded in the past 50 years. Of the five leading Hard Winter wheat varieties in Kansas in 1980 none remained as a leading variety in 1989. This rapid turnover, with only limited end-use testing of the new varieties being released, represents a challenge to domestic users and a sincere risk to our export markets. This is of concern not only to breadmakers, but to cookie and cracker manufacturers as well.

Controlled laboratory bake tests for bread indicate that only 30 percent of flour samples tested in 1988 fell in the upper half of possible performance scores, against 96 percent in 1975. This is shown in detail in an attachment to my prepared testimony, which we wish to submit for the record.³

Senator DASCHLE. Without objection it will be part of the record.

Mr. MARTEN. What I would like to point out particularly in this particular attachment which is entitled "Flour Scores" is, indeed, a very serious trend, and it is that trend that we at this time are trying to address and bring to the attention of the committee.

RECOMMENDATIONS IN RESPECT TO S. 1977

Our recommendations in respect to the bill are as follows:

First, quality considerations for domestic use should be given equal billing with export requirements throughout the bill. The studies called for in sections 102 and 104 should deal with end-use considerations for baking and other domestic uses as well as with the export factors cited in the bill. The Department of Agriculture

³ See p. 311 for the table entitled "Flour Scores." This table is part of a statement entitled, "A Perspective for Improved Flour Quality," submitted by the American Bakers Association at the USDA Agricultural Products Quality and Competitiveness Conference, June 30, 1988, St. Louis, MO.

should conduct these studies in association with representatives of the State Agricultural Experiment Stations, farm groups, grain exporters, the cereal foods industries, and the Office of Technology Assessment.

Second, end-use evaluation of new wheat varieties for domestic and export use should be given a high priority. The Federal Wheat Quality Laboratories in Kansas, Ohio, North Dakota, and the State of Washington need increased support and direction in this regard. These labs, properly staffed and equipped, have the potential to lead the way in the development of wheat varieties and could be in the forefront of developing flour quality tests for different baking needs to facilitate the screening of new varieties.

These issues should be addressed more directly in the bill. We recommend that section 601 be amended to include the certification of new wheat cultivars, and establishment of national criteria or guidelines for the release of new varieties of wheat by public and private plant breeders. We believe this consideration may apply also to other grains and to oilseeds.

Third, we support the identification of performance characteristics of seed, by varieties, in the manner suggested in section 701. This would serve as a guideline for farmers in selecting seed varieties, and as a general educational device for all elements of the industry. Section 702, however, relating to identifying varieties on warehouse receipts, may not be feasible.

Fourth, we strongly support section 703, providing for periodic compilation of the distribution and relative importance of grain varieties nationally. This report should also summarize the relevant quality characteristics of leading and emerging varieties, including end use properties.

Fifth, we support the idea of offering incentives through the price support system for clean and high quality grain that meets users' needs. We call the committee's attention to an effective procedure that was once used for wheat—the "Undesirable Varieties" list. When the price support alone was the key factor supporting prices, wheats placed on this list by the USDA were usually withdrawn from production within a few years.

Sixth, the language in section 301 which would authorize the Secretary to prohibit or limit blending of grains could present difficult problems for the grain industry. There may be some merchandising abuses relating primarily to grain for export that merit congressional action, however.

THE BAKING INDUSTRY RECOGNIZES ITS RESPONSIBILITY TO DEFINE ITS NEEDS

Finally, the baking industry recognizes its responsibility to define its needs clearly, and to communicate those needs to growers, seed breeders, and millers. We look forward to working with Congress to enact key portions of this bill in 1990, and to working with all interested parties in a cooperative environment to improve grain quality across the board. Thank you.

[The prepared statement and attachments of Mr. Marten appear at the conclusion of the hearing.]

Senator DASCHLE. Thank you, Mr. Marten.

Dr. Cholick, welcome. We are delighted to have a South Dakotan here at the committee, and we know it will probably be the most impressive testimony given all morning. We welcome you and we invite you to proceed as you see fit.

STATEMENT OF FRED A. CHOLICK, DEPARTMENT OF PLANT SCIENCE, SOUTH DAKOTA STATE UNIVERSITY, BROOKINGS, SD, TESTIFYING ON BEHALF OF THE NATIONAL WHEAT IMPROVEMENT COMMITTEE (NWIC)

Dr. CHOLICK. Thank you, Mr. Chairman. My testimony will be the only one that is not read so far. I appreciate the opportunity to represent the National Wheat Improvement Committee here today, which is made up of wheat researchers across the United States representing many disciplines.

PRIMARY TESTIMONY ON SECTIONS 6 AND 7

The testimony I will be presenting is going to be primarily on section 6 that deals with intrinsic quality and section 7, once again dealing with intrinsic quality. I would like to call the attention of the subcommittee to the focus of what we assume are the assumptions for these two sections dealing with intrinsic quality with the primary focus being the variety.

FACTORS TO DEAL WITH

The variety is only one factor of a complex biological system that we have to deal with. The other factor is the environment. Primarily, the studies that I have compiled through preparing for this testimony would indicate that the environment is a more important factor in determining both end-use, quality characteristics, and agronomic performance than the variety per se. Now that sounds somewhat misleading. Being a plant breeder, I am saying my impact is not great. That is because when we deal with varieties in all these studies we deal with them in a common geographic area, i.e., the study by Stan Cox at Kansas; the study by Dave Shelton at North Dakota State. We dealt only in these two studies with the Hard Red Spring wheat in North Dakota and the Hard Red Winter wheat in the case of Kansas.

WE ARE DEALING WITH AN EQUATION WHERE THE VARIETY IS PART OF THAT EQUATION

Therefore, the environment became a more important factor. If we were to introduce other classes of wheat into these studies, we would have seen the variety having more important impact on them. So what I would like to impress on the committee is that we are dealing with an equation where the variety is part of that equation. It interacts with the environment. Therefore, I think it is unrealistic to put the end-use quality or agronomic performance characteristics on the seed label. In addition, the seed label is really not the place that is used. What we need is the information in the hands of the producer.

Senator DASCHLE. Dr. Cholick, could you just, as you talk about it, tell me why they can do it in any other countries.

THERE ARE TWO BASIC PRINCIPLES THAT HOLD THAT ARE NOT THE SAME IN CANADA AND AUSTRALIA

Dr. CHOLICK. In preparing for this testimony, I talked to my counterparts in Australia as well as Winnipeg, and there are two basic principles that hold that are not the same in Canada and Australia.

Within the Canadian system, they essentially narrowed the window to such an extent for end-use quality in variety development that they can then use the variety coupled with geographic stratification. They do not mix the Hard Red Spring wheat grown on the black soils and the red soils which is a predominant environmental impact on end-use quality.

In Australia, the system that is used also includes a list of varieties. Now the list of varieties I would say they are potential Prime Hard Springs because that is their prime export class.

However, they then use objective testing and say will it or will it not make their prime class this year from this location? So they couple both variety with end-use or objective testing to separate them. They do not use the seed label though. They use what we would call the extension service as an arm to present this information to the producer.

MISCONCEPTION THAT BREEDERS DO NOT CARE ABOUT QUALITY

The second misconception I would like to address is that breeders do not care about quality. To take, I guess a little bit exception with the previous testimony by Mr. Marten. Quality evaluation is an integral part of every plant breeding program I am familiar with. If, and I summarize my own material and I have talked to 11 breeders, and this is all dealing with wheat, we all agreed that we actually disregard more material during variety development for quality than we do for yield. I will use my own example again in that in 1983 the No. 1 yielding variety in our region in our breeder's regional test was a line developed by my program. I discarded that line basically because of quality characteristics.

So we are concerned about quality. The big difference is that we have a larger geographic area of which Spring wheat, Winter wheat, Soft Red Winter wheat or White wheat are produced in. Therefore, having a greater impact from the environment.

THE FIVE ELEMENTS

I would urge the committee to take a look at our five elements. They deal with, in summarizing—I am not going over them because they are in the written testimony—they deal with using applied and basic research for the testing and identification of performance testing. They deal with informational service to the producer and they deal with both variety and quality surveys. So that we can stratify our marketing system and deliver the product. Finally, it also deals with the impact, and that is something that we would like to see done in analysis. Being in a university, the last thing I want to say is study something more because I am on a lot of committees. But I think we have to make sure, and I agree with Reggie Wyckoff, we have to make sure we make the decisions right.

In closing, I would like to quote Walt Bushuk, who happens to be in the Department of Plant Science and a cereal chemist at the University of Manitoba. In reading his paper, I found it interesting that, one, grade systems were actually founded by this country. But his quote in his paper says, "The main purpose of grading is to provide the purchaser a declared degree of quality and uniformity in a highly competitive world market. In addition, grades are designed to provide an optimum return to the producer." Thank you.

Senator DASCHLE. Thank you, Dr. Cholick. Mr. Whisenhunt.

[The prepared statement and attachments of Dr. Cholick appear at the conclusion of the hearing.]

STATEMENT OF ANDREW WHISENHUNT, PRESIDENT, ARKANSAS FARM BUREAU FEDERATION, BRADLEY, AR, TESTIFYING ON BEHALF OF THE AMERICAN FARM BUREAU FEDERATION (AFBF)

Mr. WHISENHUNT. Thank you, Mr. Chairman and members of the subcommittee. We want to have the opportunity to discuss these issues of Senate bill 1977. I am Andrew Whisenhunt, a soybean, rice, cotton and wheat farmer from Bradley, Arkansas. I also serve as president of Arkansas Farm Bureau and a member of the board of directors of the American Farm Bureau Federation, some 3.8 million members strong as of this past year. I think I represent, as a whole, a cross-section of agricultural people throughout the United States.

OUR MEMBERS HAVE BEEN CONCERNED ABOUT GRAIN QUALITY FOR MANY YEARS

Our members have been concerned about grain quality for many years. The quality of the commodities that we produce and market is an important factor in satisfying our customers in both domestic and international markets. Quality alone, however, does not determine if a sale is made. The other primary concern is price.

In general, buyers want the best quality product for their particular needs as they can buy at the lowest prices.

It is important to remember that standards facilitate the marketing process by defining some but not all of the parameters of quality. Quality, standards, and prices are necessarily linked and changes made to the standards on the part of government must be carefully considered so as to avoid biasing the system inherently in favor of either the buyer or the seller.

We want to commend Senators Daschle and Bond for addressing this very important issue, and we are glad that we can have a part in the comment process.

THREE METHODS TO CHANGE THE MARKET'S RECOGNITION OF GRAIN QUALITY

Action to change the market's recognition of grain quality can come about through three methods: legislative requirements, regulatory adjustments, and contractual specifications for quality factors. We believe that in general, regulatory changes and contract provisions are preferable means of effecting changes to the standards. However, legislation can facilitate regulatory action and initi-

ate additional actions which will permit us to improve the reputation of our grain quality.

CONCEPTS AFBF SUPPORTS IN S. 1977

We support the following concepts included in S. 1977:

First, designation of a grain quality coordinator in USDA.

Second, standardization of unofficial inspections should be pursued by FGIS through assuring that equipment used in grading grain provides uniform and accurate results. The implementation of this goal, however, should avoid excessive supervision of ongoing inspections that could lead to time consuming delays at delivery points during critical harvest or delivery periods.

Third, study of standards used by other nations can be beneficial. Our policy supports the United States attempting to work with other countries to develop a more universal system to compare standards of grain quality. However, we would not endorse a commitment by the United States to completely harmonize our system with those that are used in other nations. A detailed study could provide the industry with modifications which might be considered for purposes of meeting the competition if it is in our interests and capability to do so.

Fourth, assurance of a grain loading plan that is equally fair to both buyer and seller. This may be in place through the regulatory process prior to the enactment of this legislation.

Fifth, research on end-use characteristics of grain is needed as a way of encouraging producers and grain traders to respond to the need of our customers.

Sixth, encouragement for objective testing is an important practice that should be emphasized.

Seventh, development of tests for mycotoxins and pesticide residues is a worthy objective. However, we do not believe that the jurisdiction for establishing tolerances should rest with FGIS or be incorporated into the grain standards process.

Eighth, dissemination of information to farmers regarding end-use performance should be encouraged. However, we are not convinced that the seed label is the appropriate method of making such information available to farmers.

Ninth, means of facilitating identity preservation can be beneficial.

Tenth, direction to NASS to study and report on varieties produced in the United States regarding the end-use and agronomic performance.

Eleventh, exploration of alternatives to provide financial and technical assistance to farmers and elevators to install, improve and properly operate grain cleaning, storing and drying equipment may be of assistance to the industry.

FARM BUREAU IS NOT SUPPORTIVE OF MODIFYING COMMODITY CREDIT CORPORATION PROGRAMS

Farm Bureau is not supportive of modifying Commodity Credit Corporation programs such as price support loans, farmer owned reserve and the EEP program to provide grain quality incentives. Such changes could lead to unworkable and ineffective procedures

that detract from the objectives of these programs while doing little to actively promote improvements in grain quality.

PROVISIONS OF S. 1977 THAT WE CANNOT ENDORSE

The provisions of S. 1977 that we cannot endorse primarily relate to the provisions on cleanliness, physical properties and criteria for classification, grades and standards. We believe that some changes could be desirable in this area but further research is necessary to determine its feasibility and impact on farmers and the U.S. grain industry. Farm Bureau does not believe that legislation to mandate changes to the standards is appropriate at this time. What we suggest as an alternative is a legislative directive for a comprehensive study conducted by FGIS, with coordination and consultation with the FGIS advisory committee, and other USDA agencies, research institutions, farmers and grain industry representatives to evaluate the cost and benefits of changes to our system such as those proposed in titles II, III, and V.

Such a comprehensive study will take time but periodic report dates could be included that would require FGIS to submit status reports to Congress. The cost of such an undertaking may necessitate additional appropriations for FGIS to conduct this and other research initiatives included in S. 1977. This study should be designed to answer the following questions:

THIS STUDY SHOULD BE DESIGNED TO ANSWER THE FOLLOWING QUESTIONS

First: If the U.S. grain system is mandated to sell only grain meeting stricter quality standards, will buyers compensate farmers and other sellers for the improved quality?

Second: Would changes to the system be practical to adopt for farmers and grain handlers?

Third: In what channels will the industry be permitted to market damaged or substandard grain?

Fourth: Would matching our competitors standards for cleanliness, purity and damage be feasible considering the types of grain we produce and market?

Fifth: How difficult would it be for U.S. grain to meet more stringent standards and what costs would be involved?

Sixth: Would some limits on blending practices be acceptable?

Seventh: Can we decrease the tolerances for total damage and continue to supply sufficient quantities of grain at reasonable prices?

Eighth: Would it be practical to incorporate policies that would encourage more cleaning of grain before it is marketed?

There are other questions that need to be explored and added to this list. Such a detailed analysis will be necessary if changes to the system are made which could have profound implications on the grain prices, and the competitiveness of U.S. agriculture. To mandate significant changes to our system without such analysis would be inadvisable.

We close by saying that we commend you for the bill and the opportunity to present this testimony, and we will be glad to try to answer any questions you might have. Thank you, sir.

[The prepared statement of Mr. Whisenhunt appears at the conclusion of the hearing.]

Senator DASCHLE. Thank you, Mr. Whisenhunt.

You did not get to a comment in your prepared text that I was going to ask you about. Maybe a little elaboration will clarify my confusion. It says, the Farm Bureau believes that the complaints about quality that have cost us customers resulted from buyers who are inexperienced in purchasing from U.S. sources, or who are foreign government buyers unaware of the needs of their consumers. Boy, that is quite a statement. Maybe you can elaborate a little bit on what you mean by that?

Mr. WHISENHUNT. Well, in your centrally controlled economies that we have seen in the Communist nations, it is government officials that buy, and we are convinced that sometimes the complaints are based upon superficial factors or a lack of knowledge rather than when they really come and check the contract and the overall quality that they do meet the conditions. Certainly there are times when we fail. I have watched them load ships many times at the port, and I have been overseas when they were unloading ships, and there is segregation and there is times when part of the load might not meet grade, but overall met grade when it was loaded at the export before segregation occurred. And then the criticism was placed back toward us rather than saying that it was possibly in the shipping and the way it was unloaded rather than in the load itself.

There are times when those things happen. Of course, I have personally a feeling that if we could reduce that foreign matter principally and get it to zero from the standpoint of grades and then let dockage be the way to get rid of it that we would send a much cleaner grain over there and we would reduce much of this criticism, whether it is justified or unjustified.

Senator DASCHLE. So what you are saying is there are cases when it is not ignorance or lack of understanding about our product; that we actually have a problem with regard to the product we are selling?

Mr. WHISENHUNT. Sometimes this is true, sir.

Senator DASCHLE. I was not aware that in the case of our product domestically, Mr. Marten, that only 50 percent of our flour samples tested in 1987 fell in the upper half of possible performance scores against 96 percent in 1975. That is a pretty dramatic decline. To what do you attribute that?

Mr. MARTEN. I think the primary change has been the proliferation of varieties. If you go back into the early 1970's, there may have been 10 varieties total that made up the vast majority of wheat planted throughout the United States in Hard Red Winter wheat areas, particularly in Kansas. In 1988-89, there were probably in excess of 50 major varieties that were planted. I think that is one primary reason.

Senator DASCHLE. But varieties I would expect would be one of the concerns. Dr. Cholick, that sounds like an indictment on the breeding system if we produce that many varieties and then find, in spite of all these wonderful varieties, we are dropping from 96 percent in top level quality to 50 percent as far as the millers go.

Dr. CHOLICK. Let me address it in two points. One, the number of varieties is essentially an insurance policy against some of the things that have happened in the past. We do not want a recurrence of the rust epidemics in the 1950's or, using an example from another crop, the corn blight in 1972. The other factor is when the studies are done in uniform environments, we have found actually that there is a slight advantage in flour extraction. In Richard Reid's paper that I have, we can compare 1984 and 1985. Now 1984 was a poor year, terrible mill extraction for the millers due to the environment. If we compare the variety surveys of 1984 and 1985, we see there was literally no shift in varieties.

If we take a look at the 7 years you put across there, we once again see that there is a nominal shift in varieties within 7 years. You have to remember that we typically evaluate somewhere between 19 and 28 quality characteristics, ranging from kernel size to flour yield and absorption, to finally making a loaf of bread and getting scores on the bake. Any one variety is not going to be number one across the board. There is a give and take, a balance, just like when a producer selects a variety. The large number of varieties gives us a buffer zone essentially against changes in the environment.

The studies done in Australia, now again going to one of our competitors, would indicate that once again the environment is more important. But they once again do have a tighter restriction. I will have to admit that, not as tight as the Canadians. Once, again—

Senator DASCHLE. But, is it not rendering all of this somewhat meaningless if, in the process of trying to adapt to changes in environment, upper performance levels are not attained like they used to be? Now are we only reaching 50 percent of the attainable goal, rather than the 96 percent reached in 1975?

Dr. CHOLICK. That is a year effect, Senator.

Mr. MARTEN. I strongly beg to differ. This particular test that is performed in a laboratory that literally has the same people since 1973 so there is a continuity of equipment and continuity of people. There has also been something that has taken place during that time period and that is the introduction of the semidwarfs and the green revolution that indeed produced a substantial quantity of wheat production. The industry has had many conversations with the breeders and one of the misrepresentations that has taken place is that the baker is opposed to the breeder. The breeder responded to the message that the farm bill sent in 1975, 1980 and 1985. And that was for disease resistance and quantities of production.

I am sure that the doctor would support that the breeding programs have anywhere from a 3- to 5- to 8-year cycle so what is being delivered to us today in varieties were initially started in the early 1980's and have to be dealt with. What we are asking you to help us with is a problem that the farm bills created. The flour industry, the baking industry can solve it given enough time. But through some research efforts and other means, you can help us solve this much more rapidly as in the way that it was created rapidly through the farm bill.

Dr. CHOLICK. Two points. The environment I am talking about is not the environment in the mill. The environment I am talking about is the environment in which the wheat was grown is influencing intrinsic quality. And there I have to go back to the latest study by Stan Cox, a 2-year study, three locations in Kansas, varieties developed over 70 years, and literally except for a very negative trend which negatively influences breeders of letting protein slip through one period of that time, essentially can find no difference between the varieties when they are run through the lab at Kansas.

The other point I would like to make is that a recent publication from Australia, in documenting the improvement of yield essentially in Australia, says, "Yield has been achieved," or "80 percent of the yield has been achieved through two means. One, the introduction of a semidwarf genes to change harvest index." That is straw-to-grain ratio. "And two, an increase in the number of kernels per ear" in Australian terms. We call it kernels per head. So their increase in yield through variety development is very comparable to ours and essentially use the same genetic mechanisms we are using.

Mr. MARTEN. May I respond?

Senator DASCHLE. Sure.

Mr. MARTEN. We concur that the environment is a factor. We do not see it, though, between these scores that take place in 1970 and what we see in the 1980's as being environmentally driven. Let me use an example of a rye gene that has been introduced into U.S. wheat varieties for disease resistance. It is titled 1B1R. It originated in Australia, and to my knowledge the Australian wheat breeders have now been banned from using it. It is environmental responsive, and if it is bred into certain wheats, and those wheats are grown under unknown conditions, and we do not know what those are right now, it will create a tremendous sticky dough characteristic. This is a characteristic where the flour itself, in the mixer in a bakery, will not take up the water. It will remain on the surface.

If this occurs, this dough must literally be thrown away as an outright cost to us. Now we do not know what triggers that, but in Canada as in Australia, the use of that gene for breeding has been outlawed, and just as the FDA has control over certain things that enter the food chain, it would seem that there would be somewhat of a parallel here.

Senator DASCHLE. Sounds pretty reasonable to me.

Dr. CHOLICK. The gene is being used in Canada, and they have developed a new class for its potential use. They call it the HY series and lines are being developed in Canada. We recognize that that particular rye introduction, and we have expanded our testing on dough handling characteristics in all the breeding programs from Texas clear through to North Dakota to make sure we can identify that. In addition, we get a similar agronomic benefit from 1A1R, which is another translocation that we are working with or substitution which right now appears will not have the quality characteristic deficiencies that we have in 1B1R translocations.

Once again, all three nations are using 1A1R. So we have recognized that. We are trying to eliminate that from our program. We have to once again go back to cost benefit. If we take a look at the

ability to increase yield, the ability to increase the competitiveness of the American farmer, we develop varieties so that he can maximize his return, and he uses a long list of variables to make that decision.

Senator DASCHLE. But when you have a farm bill, Dr. Cholick, that says we are going to pay you a target price and a loan rate on the basis of the number of bushels you produce, not how good they are, but the number of bushels you produce, would you not think that is overwhelming incentive to produce for quantity rather than quality?

Dr. CHOLICK. I have to agree. It is an overwhelming incentive, and let me couple that with the personal experiences from South Dakota. One of the things I do is try tremendously to keep the protein content high. And yet the marketplaces last year had up to a 45 cent negative premium for protein. We also encourage management practices.

Senator DASCHLE. But we know why that was the case. It was just a sheer excess in volume of high protein wheat.

Dr. CHOLICK. Yes, that is 100 percent correct.

Senator DASCHLE. So I mean that is no big deal. That is just the market working. But that is not normally the case.

Dr. CHOLICK. Yes, you are right. It is not normally the case. That is correct.

Mr. MARTEN. Senator, may I draw your attention to another example?

Senator DASCHLE. Yes.

Mr. MARTEN. There is a wheat breeding program at Texas A&M University, and over the years they have developed a number of wheats with the TAM reference, 101, 105 and so forth. The millers that we do business with in Texas do not buy local Texas wheats because these TAM varieties that are being released have very, very poor bake qualities. Now the question often arises, is a baker or end-user willing to pay for that? We are effectively paying for it now because the millers that are milling wheat, for our company and others, are having to transport wheat from Oklahoma, from Kansas, from Nebraska and other Northern States in order to accomplish that. I am certain to the detriment of the Texas farmer.

The point, also I would like to add that in the case of this particular program, to my knowledge, they have a very, very limited bake laboratory, and although they do recognize baking quality as being one of the criteria, is it 1 of 28 and does not get great weight and therefore has caused the release of some varieties which are frankly only good for export which is a very bad attitude to have because somebody of another country is eventually going to have to bake that product also.

Senator DASCHLE. Well, I want to thank our panel members for their contribution to this hearing. It has been a good day. Let me just ask does any witness wish to return to the table for any final comment? Normally we reserve some time at the end for a round-table discussion, but I will leave the record open if someone wishes to respond to any comments made, or have another thought that they wish to express prior to the time we close out the hearing. Well, if no one wants to say anything more now, let us do this at least. We will leave the record open for a period of 5 days, and if

anyone wishes to further add to the comments made today, we would be delighted to have that testimony. I thank all the witnesses, and this hearing is adjourned.

[Whereupon, at 12:10 p.m., the subcommittee adjourned, subject to the call of the Chair.]

[Material submitted for inclusion in the record follows:]

APPENDIX

PREPARED STATEMENT OF RON SWANSON, VICE PRESIDENT FOR RESEARCH, NATIONAL CORN GROWERS ASSOCIATION, GALT, IA

Mr. Chairman, thank you for the opportunity to testify on behalf of the National Corn Growers Association (NCGA) on grain quality issues. I am Ron Swanson, a corn and soybean farmer from Galt, Iowa and the immediate past NCGA vice president for research.

Our organization has a long-standing interest in grain quality. In a competitive world market, we realize our customers are just as concerned about the quality of the grain they can buy from the United States as they are about the quantity we make available for sale.

NCGA believes the primary purpose of any grain quality standard should be to promote the retention of the quality of grain throughout the entire marketing process. We also agree with other commodity and grain industry groups that the official U.S. standards should describe and certify the quality of grain as accurately as possible.

Last November, NCGA's Executive Committee endorsed the basic concepts of the bill introduced by Senator Daschle and Senator Bond, the Grain Quality Incentives Act of 1989. We also have specific policy on grain quality, which I have attached to this statement. Also please find attached a summary of an aflatoxin action plan [VII. Summary of Issues extract] developed by the Iowa Corn Growers Association (ICGA) which has been adopted by NCGA and several ICGA publications on grain quality factors.

I want to stress our overriding feeling on grain quality is that legislation should not micromanage the process of establishing grain grades and standards. More appropriately, legislation should set up a framework of goals and objectives within which Federal regulators should develop grades and standards. In this way, standards can be adjusted to changing market factors much more quickly and efficiently.

Several elements of the Daschle-Bond initiative, S. 1777, would be particularly useful in helping to increase the overall quality of grain as it arrives at its ultimate user. Indeed, basing our system of grades and standards on economic factors important to end-users must be paramount.

We agree with the need for certification and standardization of inspection criteria and the need for more cooperation between Federal regulators and those within the government community interested in grain quality issues, including USDA's Federal Grain Inspection Service and Agricultural Research Service and our system of land-grant universities.

Our organization would also like to see more objective testing for various end-use properties. For corn, they would include protein, starch and oil content. In addition, we agree that U.S. grain standards should be studied in comparison with those of other nations and that differentials in price levels administered by the Commodity Credit Corporation should reflect true differences in the value of grain to final users.

I would add, however, that we have questions about some sections of the Grain Quality Incentives Act as they currently are written.

For example, it is somewhat unclear as to how FGIS is to determine adverse conditions that make grain unacceptable for normal intended uses in foreign markets, as suggested in section 301 of the bill, without more specifics on just who those end users are. The result of this language could be that grain would be bought and sold on the basis of destination grades, as opposed to the current system of establishing grades at the first point of sale.

As for export inspections, FGIS has proposed revisions to the shiplot inspection plan and final rules are expected soon. If these changes assure fairness by favoring neither the buyer nor the seller, requirements such as those in section 401 would not be needed. If not, some legislative remedy may be appropriate.

The design criteria for grades and standards in section 501 are useful, but we want to be careful the section does not mandate new grades and standards—only that it allows for modifications to reflect new technology and new end-use characteristics. Frequent changes in grades should be avoided because they can cause market disruptions and undermine the confidence of foreign buyers. In keeping with NCGA policy favoring retention of grain quality throughout the marketing process, we would recognize the merit of a separate grade designation for grain that includes damage levels, impurities or other conditions that make it generally unsuitable for normal intended uses.

Although we agree measures of end-use performance should be more available to farmers, title VII's requirement that they be listed on seed labels may not be the best way of going about it. Existing sources, including the Extension Service, trade associations and market demand can communicate those performance factors. In addition, titles VIII, IX and X are rather vague as to how CCC standards should be adjusted to help recognize the differences in the true value of our grain. At any rate, quality premiums or discounts should be implemented only if grain is to be forfeited to CCC since uniform sampling of farm-stored commodities is difficult to do when a loan is requested and since many farmers intend to redeem loans rather than forfeiting their grain collateral.

Finally, with respect to titles XII and XIII, we would note the entire question of the relationship of Federal multiperil crop insurance and disaster payments needs to be addressed. NCGA favors the continuation of the Federal crop insurance program and urges corn growers to consider its use, but any Federal risk-avoidance initiative should take into account grain damage as a result of unavoidable adverse weather, pest or disease conditions.

Those last observations notwithstanding, Senators Daschle and Bond are to be commended for highlighting the need for more attention to grain quality standards. Their bill has certainly been useful in promoting more communication between producers and the grain industry, which benefits both sectors.

We at NCGA hope the end product of this process is a set of workable parameters within which Federal regulators can mold realistic, valued-based standards that will be fair to all market participants—end users, merchandisers and farmers. The National Corn Growers Association is prepared to offer any assistance we can toward that goal.

[Attachments follow:]

GRAIN QUALITY

A. The primary purpose of the official U.S. standards for grain should be to describe and certify the quality of grain as accurately as practical. They should: (a) Define uniform and accepted descriptive terms to facilitate trade in grain; (b) provide information to aid in determining grain storability; (c) promote the retention of the quality of the grains during the marketing process; (d) offer end users the best possible information from which to determine end-product yield and quality; (e) provide the framework necessary for markets to establish grain quality improvement incentives.

In order to achieve these objectives, we support the following actions for corn:

1. If research indicates no significant adverse impact on any particular segment of the grain marketing structure, the broken corn and foreign material should be separated for grading purposes. A grade determining factor called Broken Corn would be established with levels set to be consistent with the objective of increasing corn value. The foreign material would be a nongrade determining dockage factor. For the ease of commerce, a tolerable level of foreign material could be determined with the balance above that point becoming a weight subtraction.

2. The FGIS or its designees should issue an Official White Certificate only when the grain samples are representative of the entire container being inspected and are collected by approved methods. Corn that cannot be sampled under these conditions should be issued a different color certificate.

3. We support the research, development and testing of end-use quality characteristics. We support the development of the equipment and sampling/testing procedures which would quickly and accurately determine nongrade end-use value of corn. Nongrade factors include protein, oil and starch as well as other factors including, but not limited to mycotoxins.

4. Encourage the certification and standardization of testing equipment and testing laboratories for quality factors of corn.

5. Support the research and testing of corn varieties in all States to determine ability to produce specific quality characteristics and the development of new varieties with improved quality characteristics.

6. Appropriate State and Federal agencies should adopt the same set of moisture meter calibrations for each grain to make all meters in the trade agree with FGIS-approved meters.

7. An incentive should be developed to reward those producers who deliver pure, clean grain determined to be of high quality and in demand by the marketplace.

8. Changing grain grading standards to give sellers credit for dry corn on a dry matter basis.

9. Support initiatives to improve grain quality.

10. Support work toward uniformity of U.S. grain standards, tests, and testing equipment with those of other nations.

B. Aflatoxin.

1. Support the strategy developed by the Iowa Aflatoxin Task Force as a means of dealing with aflatoxin.

2. Continue to support research for alternate safe uses of aflatoxin corn and its products.

[Summary of an aflatoxin action plan developed by the Iowa Corn Growers Association, excerpt, VII. Summary of Issues, follows:]

VII. SUMMARY OF ISSUES

These regulatory recommendations support the layered defense strategy. Others are applicable regardless of strategy. The Iowa Aflatoxin Task Force also has a list of research needs to address testing and other questions regarding aflatoxin. The industry can only be expected to do the best job technologically possible. Regulatory enforcement should therefore allow for appeal procedures and should limit the liability of growers and handlers.

The Iowa Aflatoxin Task Force recommends that:

- Weather data be used as an early-warning of aflatoxin.
- USDA-NASS analyze a national sample set for aflatoxin.
- IDALS test food products for aflatoxin.
- FDA consider aflatoxin a naturally occurring contaminant and allow limited blending within the established tolerances for the market being served.
- Grain receivers follow a set of recommended practices for testing and segregation.
- Standardized sampling and testing procedures be developed for FGIS inspections.
- FDA maintain usage guidelines as consistent policy from year to year.
- National policies be set for warehousemen's responsibilities relative to aflatoxin.
- Procedures be defined for the FDA, FGIS, warehouse officials and others to make referrals to other regulatory agencies and each other.
- Government programs be implemented to remove the incentive for evading aflatoxin detection and to provide economic compensation if the corn cannot be marketed for human or animal consumption.

[The prepared statements of Arvid Hawk and Ervain Friehe follow:]



National Grain and Feed Association
STATEMENT
OF THE
NATIONAL GRAIN AND FEED ASSOCIATION
BEFORE THE
SUBCOMMITTEE ON RESEARCH AND GENERAL LEGISLATION
COMMITTEE ON AGRICULTURE NUTRITION AND FORESTRY
U.S. SENATE

February 22, 1990

Good morning, Mr. Chairman and members of the Subcommittee. I am Arvid Hawk, and I appear today on behalf of the National Grain and Feed Association, whose Grain Grades and Weights Committee I chair. I am manager of grain handling for Cargill, Incorporated, Minneapolis, Minn. I am accompanied by Alex S. Curtis, president and chief executive officer of the Farmers Grain Terminal, Inc., of Greenville, Miss., a farmer-owned cooperative whose three river elevators and five country elevators operate in the states of Alabama, Arkansas, Louisiana and Mississippi.

The National Grain and Feed Association consists of 1,350 member companies comprising 5,000 grain and feed facilities that store, handle, merchandise, process and export more than two-thirds of all U.S. grains and oilseeds. Our member firms range in size from the smallest country elevator to the largest grain and feed complex. Member firms include country, terminal and export elevators, feed mills, cash grain and feed merchandisers, commodity futures brokers and commission merchants, processors, millers and allied industries. The NGFA also consists of 42 affiliated State and Regional Grain and Feed Associations, whose members include more than 10,000 grain and feed companies nationwide.

Mr. Chairman, the grain industry is vitally concerned with the preservation and enhancement of the United States' reputation as a responsive, reliable and competitive supplier of the wide range of qualities sought by our customers. We welcome a serious, thoughtful examination of the many issues raised by the current discussions on quality.

The U.S. grain industry is committed to delivering the quality sought by our customers. We back that commitment in many ways. For example, the industry currently is an active participant in a series of Grain Quality Workshops in which grain quality issues are discussed and addressed in an

open and constructive way by producers, grain handlers, processors, end-users and academicians. In fact, the NGFA has been privileged to coordinate the logistics of these workshops. But these workshops are more than just talk. In fact, more than 60 specific, concrete recommendations for change involving grain quality have emanated from the Workshops during the past four years. Those proposals and suggestions have been forwarded for action to FGIS, whose representatives are invited and attend the workshop meetings and hear the discussions first-hand. These workshops have identified many of the same topics addressed in S. 1977, and we believe the cooperative effort among Workshop participants is making progress in addressing these important matters.

In addition, FGIS itself is required to initiate a comprehensive review of every single grain standard every five years. The process starts with publication of an advance notice of proposed rulemaking, in which FGIS asks all parties to submit any suggestions they wish for changing the standard. The agency itself then proposes specific changes to the standard, whereupon all interested parties again have the opportunity to provide input and data to substantiate their respective views. These periodic reviews of the standards ensure that each receives regular, comprehensive review. However, of course, this does not preclude FGIS from initiating changes in the standards for each of the grains on a more frequent basis if and when the need arises.

It is for these reasons the NGFA generally believes this open, deliberative rulemaking process -- not legislation -- is the preferred avenue for addressing the complexities of changes to the grain standards and their multiple ramifications. Likewise, this approach is preferable when it comes to broad-based grain quality directives that would result in unanticipated impacts throughout the grain production and marketing system. Of course, Congress has a vital role to play in performing its proper oversight function to ensure that the already considerable grain quality legislation is being implemented as intended, and for redirecting FGIS when and where warranted.

But aside from these regulatory and legislative aspects, an even more important factor exists. Our industry must demonstrate its commitment to quality every day in the marketplace. After all, it is our livelihood that is at stake. We listen to our customers and respond to their needs. We're not successful because we sell less grain or serve as a market of last resort. Our success depends upon our ability to identify customer preferences and to develop new technologies and practices to meet our customers' changing demands more efficiently and economically. And, most importantly, to do it better than our competition. It is this attention to customer preferences and our willingness to find new and better ways to meet their changing requirements on an ever-increasing scale that have resulted in the United States' leading position in world agricultural trade.

The provisions of this legislation touch upon many issues and make apparent the complexity of the subject of grain quality. Several of the titles of the bill offer constructive approaches to improving the understanding of grain quality and promoting better use of available resources to address grain-quality issues. But several titles also raise some questions and concerns among industry members, which we hope will be resolved in this hearing process.

We would like to examine the individual titles of the bill and offer comments on each.

Title I. Coordination and Implementation of Grain Quality Improvements.

-- Section 101. Coordination of federal activities and programs. Designates a grain quality coordinator and lays out reporting responsibilities for that person.

The NGFA does not oppose the concept of a grain quality coordinator being appointed within USDA. Indeed, the Secretary of Agriculture already has the authority to designate such an official if one is believed necessary. Our industry will work with such a coordinator if and when one is appointed.

S. 1977 implies such a coordinator would be selected from within USDA. We suggest -- for both practical and budgetary reasons -- that if a grain quality coordinator is to be appointed it be an experienced official occupying an existing USDA position.

-- Section 102. Benefits and costs associated with improved grain quality. Requires an economic analysis within 180 days of the costs and benefits of "improved" grain quality and of the effect of such actions on U.S. competitiveness.

Such studies are critical to constructive action on the questions surrounding the grain quality issue. The more important issue is timing. It is imperative that an assessment of the costs and benefits associated with S. 1977 -- and to whom they will be allocated -- be completed prior to enactment of the other major provisions of the bill, which call for making significant changes to existing programs, policies and practices related to grain handling and marketing.

Furthermore, we believe that the timetable for completing an economic impact analysis should be more realistic than the 180 days mandated in this bill. We question whether a comprehensive, in-depth economic analysis of the impacts of this wide-ranging bill can be accomplished in such a short time frame.

It is only prudent to discover the multiple ramifications and estimated costs of changes before -- not after -- they are implemented. A prime example is the current research being done by Dr. Charles Hurburgh at Iowa State University and Dr. Lowell Hill at the University of Illinois, who are examining the impact of considering broken corn (BC) and foreign material (FM) as separate factors under the Official U.S. Grain Standards for corn. The need for solid research knowledge on this subject before changes in the standards were made was deemed to be so important that the National Corn Growers Association itself is funding half the project. The remainder of the project is being financed by the NGFA, NC-151 (a regional group of university grain quality specialists), the Federal Grain Inspection Service, the North American Export Grain Association and the Grain and Feed Association of Illinois. The research project is scheduled for completion in December.

-- Section 103. Standardizing unofficial inspections. Requires development of procedures and national guidelines for unofficial inspections of grain at licensed warehouses and other locations where such inspections result in price adjustments for grain.

This requirement would raise many procedural and economic concerns for all segments of the grain handling industry. At the outset, it is important to note that producers currently have the option of calling for an official inspection of a file sample if they believe the initial testing is incorrect for any reason. This existing right was buttressed further by a change in the Uniform Grain Storage Agreement contract for 1990-91 that also extends this right to producers under the price support program, regardless of whether they do business with country or terminal warehousemen.

Under this existing system, those producers who choose to request an official inspection incur the additional cost for obtaining further evidence of the testing reliability of the elevator performing the grading. It is enlightening that relatively few producers choose to do so -- clearly suggesting that by and large they are less concerned about equipment standardization than one might suspect. This would indicate that the costs and logistics involved in such extensive official testing simply are greater than the perceived need for the service.

Perhaps this is attributable to the fact that in our highly competitive industry, producers have many options in determining where or to whom they deliver or sell grain. There simply is little to be gained by an operator who uses faulty testing equipment or improper grain inspection procedures; in most cases, the nearest competitor is just down the road. Thus, we believe there is not justification for requiring industry members and producers alike to bear the brunt of additional costs that invariably would result from FGIS formulating national guidelines to be used in unofficial inspections.

As the users of the federal inspection system -- and the ones who pay for more than 85 percent of the tab for its operation -- we also have concerns over this and other provisions of S. 1977 that we believe would expand the mission and function of FGIS, and in so doing actually dilute its effectiveness. It was less than a decade ago that FGIS was an agency characterized by multiple administrative layers and overlapping functions. We recall only too vividly that as recently as 1977, FGIS had developed such a bureaucracy that there were no less than 2.1 supervisors or multiple administrative officials for every 1 person actually on the line doing the inspections and weighing.

Simply put, FGIS had become an agency that had lost sight of its mission. And its effectiveness in providing accurate and cost-efficient inspection and weighing services reflected it. Congress -- first in the budget reconciliation act of 1981 and again in the FGIS reauthorization legislation of 1985 -- properly recognized this shortcoming, and took action to correct it by instituting a provision that caps FGIS spending on administrative or supervisory functions as a percentage of the money spent actually providing the inspection and weighing service. This road to reform in which FGIS very properly has been refocused on its original mission is not something to be tampered with lightly. In that regard, provisions of S. 1977 that would expand considerably FGIS's responsibilities to the unofficial inspection system and the interior market are troubling. Such expansion of FGIS's responsibility will impose additional costs on users of official services. This will serve only to accelerate the current trend of shifting from the use of official to unofficial inspections at interior locations.

There are other, less disruptive ways to accomplish the same objectives. One alternative would be to mandate that FGIS become more directly involved in the unofficial inspection system. We

believe there is merit in directing FGIS to work to reconcile differences between grain testing equipment requirements at the state level. Several states have implemented inspection programs that certify the accuracy of testing equipment. We believe this directive, in combination with the option that producers now have to request official FGIS testing of file samples would provide adequate safeguards in the marketplace.

We would be remiss not to voice two other concerns over the implications of Section 103 of the bill.

First, the provision requiring the adoption of FGIS-specified procedures and equipment would have a disproportionate impact upon smaller facilities -- many of which are open only during harvest season. These facilities would be asked to make substantial investments in new equipment and staff. But they would be less able to absorb the costs than others, thereby undermining their ability to compete with operations having greater resources. At all facilities, at least some of these added costs would in turn be passed back to the producers served by the elevator.

Second, this section of S. 1977 also includes a stipulation that warehousemen licensed under the U.S. Warehouse Act be required to use grain sampling procedures, testing techniques and standards approved by FGIS. It is important to stress that the federal warehouse system is voluntary, and we believe it is inequitable to require one segment of the industry to operate under a different set of unofficial grading procedures than the remainder of the industry. The practical effect of such a provision could be the resigning, en masse, of warehouses from the federal warehouse system -- to the detriment of producers and the industry -- if FGIS-specified procedures, testing techniques and standards for unofficial inspections were too cumbersome.

-- Section 104. Report on the international harmonization of standards. Requires a report by the Secretary of Agriculture to Congress by the end of 1992 on grain standards, tests and procedures in other countries and recommendations on harmonization.

The industry would not oppose a report on the practicability and desirability of harmonizing U.S. grain standards, tests and testing equipment with those of other nations, provided it is done in a comprehensive way by knowledgeable and qualified USDA personnel.

However, it should be emphasized that two of the strengths of the U.S. grain standards is that they remain relatively stable and widely understood. Caution should be taken to preserve these attributes in any review or harmonization effort. Grades function as a "short-hand" medium of communication between buyers and sellers and as a mutually understood basis of quality. This understanding eliminates a possible source of risk to both parties in a transaction. That is extremely important to the foreign buyer, who knows the quality characteristics represented by a specific grade of grain. It also is vital to the domestic trading of grain. And, since the grain standards that apply to cash grain also apply to futures contracts, hedgers do not face any additional risks in the hedging decisions because of nonuniformity in grades.

-- Section 105. Cooperative enforcement of purity requirements. Expresses the sense of Congress that EPA, FDA and FGIS should work together to assure the purity and integrity of grain sold domestically and abroad.

The NGFA does not oppose this provision. Indeed, as public attention to food safety issues has grown, members of these agencies and the industry itself increasingly have worked closely together to address legitimate quality issues. We will continue to do so.

Title II. Improving the Cleanliness of Export Grain.

-- Section 201. Improving the cleanliness of grain exports. The United States shall meet the cleanliness standards achieved by competing exporters; regulations shall be promulgated within 120 days to achieve this goal; over five years, increasingly stringent standards of cleanliness shall be phased in and acceptable levels of non-grain material phased down.

Our major concern is that this section attempts to prejudge the need for a "cleanliness" standard without adequately recognizing the current system's flexibility and effectiveness in meeting the demand for "clean" grain. Like other components of the grain quality equation, "cleanliness" is not the sole determinant of quality needs; rather, as will be emphasized throughout this statement, quality is a judgment call made by buyers on a frequent and ongoing basis as they balance quality requirements with price. It is important that changes to the existing system be predicated upon that reality.

Grains are a mixture well before they come off the farm. In fact, that mixing process begins when the grain is harvested and is commingled as the producer brings it into the elevator. Each part of the mixture of whole kernels and grain material has economic value; that value varies depending upon the specific needs and requirements of each domestic and overseas customer. And the needs and requirements of a single buyer can change dramatically from day to day. Thus, we see a major pitfall if Congress attempts to mandate that only one level of "cleanliness" will be offered in the U.S. marketplace. It is not our industry's role, we believe, to force these economic costs on the producer -- costs that we believe from experience do not reflect the economic realities of the marketplace.

There also exists a mistaken impression that "cleanliness" somehow deteriorates as grain moves from the farm through the grain pipeline to export. In fact, the opposite is true. For instance, a May 1986 General Accounting Office study entitled *"U.S. Grain Exports: Concerns About Quality"* found that a higher proportion of wheat at export was in the lower dockage ranges than was the case either at harvest or in the interior. Specifically, the GAO study said that dockage levels in wheat shipments at harvest and in the interior ranged from 0 to more than 10 percent, but ranged from 0 to 9.49 percent in the interior elevators and ranged from only 0 to 2.99 percent at export points.

Further, a study performed by USDA's Economic Research Service discovered that the overall average of all dockage measurements at harvest was 0.97 percent, while the overall mean content of all dockage measurements at export was 0.71 percent. ERS concluded from its analysis that dockage either was cleaned from wheat before it is exported or that only cleaner wheat is moving into export channels.

In the United States, the grain marketing system accommodates the often widely divergent needs and preferences of buyers through a contractual system that enables customers to specify individual

requirements. This system has worked well. Furthermore, efforts to define some sort of common definition of a cleanliness standard will prove very difficult. Guidelines for grain cleanliness vary considerably among exporters, reflecting the different perceptions of the demand for "clean" grain on the part of buyers. In addition, some foreign buyers prefer to clean the grain once it arrives at destination, since foreign material or dockage can be generated while the grain is in-transit. In a system that allows buyers to set their own cleanliness standards (with attendant economic flexibility), a common definition isn't as important as some may suspect. Rather than begin with a directive to ascertain some arguable "commonly achieved" standard of cleanliness, it would be preferable to have a sound analysis of what is to be gained from a standard built around such a definition.

Title III. Improving the Physical Soundness and Purity of Export Grain.

-- *Section 301. Improving the physical soundness and purity of export grain. Procedures shall be established ensuring that foreign customers receive grain suitably sound and pure considering contract grade specification, end-use performance goals and the condition of comparable grain supplied by other exporters. To carry this out, the administrator shall consider grade-determining factors and factor limits now in effect for their suitability as contract specifications for end users; changes in such factors and factor limits will be assessed, alone or in combination with a prohibition on blending.*

High-quality grain may be blended with lower quality grain, if the resulting grain is marketed as the lower grade. Blending of lower-quality grain with higher-quality grain that is marketed at the higher grade may be prohibited by the administrator.

This title of S. 1977 raises a long list of troublesome issues. But four are of paramount importance:

- The Federal Grain Inspection Service would be asked to inspect grain not only on the basis of objective quality measurements, but also on such hypothesized and subjective criteria as the importing customer's needs. This would have the effect of placing each and every official grain inspector in the untenable position of rendering not only objective inspection results but also subjective judgments on the quality of each lot of grain being exported.

- The "guaranteed-on-arrival" concept introduced in this section of the bill would undermine a traditional export grain contract: the F.O.B. contract.

- It would require action on possible changes to grade-determining factors and limits, creating classifications similar to those of other exporters.

- Broad-based restrictions on blending practices would be authorized as a method of protecting the soundness and purity of U.S. grain exports. If implemented, these restrictions would create bargain-basement prices for domestic processors of a wide range of U.S. grains -- to the detriment of producers themselves. The NGFA believes these adverse economic consequences for U.S. grain producers and marketers would far outweigh any supposed gains from the proposed blending restriction.

The rationale undergirding this title of S. 1977 appears to be the belief that by adopting "cleanliness" guidelines like those of some other exporters, the United States will be more competitive and garner export opportunities currently not being realized, with resultant higher returns to producers. However, before such a conclusion is reached, several other factors must be considered.

Ensuring Delivery of Contracted Grade

For instance, if the intent of this title of S. 1977 is to ensure delivery of grain meeting a specific contract grade at destination, that can be done immediately. Buyers are well aware of the potential for delay, damage or quality deterioration as a shipment moves to its final destination.

But reducing the level of deterioration to match origin grade with destination grade involves much more than changing the definition of cleanliness and tolerances for non-grain material. Indeed, grain exporters' control over the quality of grain ends when the grain flows through the spout during the loading of a vessel. After that, the principal determinants of grain quality at destination involve a whole host of factors, including: the condition of the ship hold; ship-board fumigation and grain conditioning procedures; the length of time the grain is on the High Seas; the season of the year in which the grain is shipped; the length of time vessels wait to unload the cargo at the destination port (in the case of recent corn shipments to the Soviet Union, delays of two months or longer were not uncommon); the grain unloading practices of the receiving nation (some nations unload U.S. grain with bulldozers and front-end loaders, hardly conducive to ensuring grain quality); the internal transportation network of the receiving nation and its ability to deliver grain to the end user; and the quality of the grain handling and processing equipment used by the foreign firm that is the end-user.

To compensate for these variables, foreign buyers have the option of purchasing higher grades of U.S. grains and oilseeds. But few elect to do so because of the additional costs involved. That is, they make a conscious decision daily that balances their needs for quality versus the price they can pay.

It is into this complex arena that the sponsors of S. 1977 propose to place FGIS inspectors, who would be asked to implement procedures that "ensure the receipt by the foreign purchaser" that the grain specified contractually is "suitably sound and pure considering the contract grade specification, the end-use performance goals of the purchaser and the condition of comparable grain being supplied by other exporting nations." This would place the FGIS administrator in the position of developing procedures that instruct inspectors on how to grade grain on the basis not of objective, scientifically based standards, but rather on the basis of subjective criteria that would vary depending upon the anticipation of the to-arrive quality and uses of the grain at destination, with all of the inherent imponderables involved.

We submit that this is a wholly improper role for FGIS to play. In essence, this provision would transform the U.S. grain standards into a subjective "moving target," undermining their principal strengths -- the fact they are objective, relatively stable and well understood.

Another side effect of this provision of S. 1977 would be to undermine a whole category of export sale -- the F.O.B. contract. Exporters now would have to factor in the risks associated with guaranteed arrival qualities for export grains, including factors that shape grain quality that are beyond their control. We envision that the result would be the more prevalent use of C.I.F. contracts, which would involve significantly higher costs to U.S. exporters -- costs that would be allocated to the export customer in the price charged for grain or be passed back through the domestic U.S. grain marketing system.

Cleanliness Standards

If the rationale for this title of S. 1977 is that revised definitions of grain "cleanliness" will result automatically in greater economic returns, we question whether that would be the outcome. Changing the cleanliness guidelines certainly will change the pricing economics for the industry. Producers and other handlers will incur the costs of meeting those standards. But our trading experience suggests that the demand for "cleaner" grain may not be as strong and widespread as the sponsors of S. 1977 hypothesize. Indeed, we believe such demand represents more limited specialized quality needs of a few buyers. The United States is positioned -- in its role as a "full-service supermarket" of grain qualities -- to meet these and other demands for specific quality needs and in the volume our customers desire.

The result of altered cleanliness guidelines could be little more than added costs to U.S. agriculture of meeting these requirements, while buyers are in fact reluctant to pay the premium prices involved. Thus, the proposed language may accomplish little more than unnecessarily interfering with the normal buyer-seller relationship and the process through which marketing and pricing decisions are made.

The industry welcomes the interest of the authors of S. 1977 in maintaining and, where possible, improving the U.S. reputation for "sound, pure" grain. The industry has been working with producers, end-users and others through the Grain Quality Workshops to that end. We have been pleased with the progress made through this deliberative forum, and believe firmly that this approach and the proposals emanating from it is a far more productive method of addressing the matter of grain cleanliness and the broader issue of grain quality. Indeed, the U.S. grain marketing system already is moving in the direction of greater attention to the end-use needs of buyers. But those needs vary widely, especially for wheat customers. It simply isn't practical to attempt to incorporate rigid and comprehensive end-use needs into the grade factors or limits, especially when the widely differing end-use needs of customers can be addressed individually through contracts.

Our underlying concern is that legislative attempts to address these complex and important issues risk taking price out of the marketing equation. They risk locking U.S. agriculture into rigid guidelines and requirements, when what is needed most is a dynamic, flexible process capable of assimilating a wide spectrum of existing and emerging information on quality matters, and acting constructively on them through a process involving all sectors of U.S. agriculture.

The industry will continue its positive efforts on this front. But we question whether adapting U.S. standards to match those of other exporters will provide any meaningful or substantive gains for U.S. grain sales. In fact, we are concerned just the opposite might occur.

Blending

The industry is concerned with the language in the bill related to blending. This subsection opens the door to a prohibition against the blending of lower-quality grain with higher-quality grain, if such blended grain is marketed at the higher quality. The apparent motive is to prevent substandard grain from entering the marketing chain.

Blending has become controversial, in part because of the perception that it is used to downgrade stocks when in fact it is a marketing and stocks management tool that is used solely to enhance the average value of grain being delivered by producers. A reasonable person has to seriously question why any elevator operator would spend money to blend grain in an intentional attempt to devalue his inventory. It just doesn't make economic sense!

One of the largest factors (if not the largest factor) shaping grain "quality" is weather. Widely differing climatic conditions lead to widely differing commodity qualities in different producing areas and in different years. Thus, the grain industry is not akin to a manufacturing industry -- weather is a major uncontrollable element in the "assembly line" of the U.S. grain production and marketing system. Other factors, such as the different varietal characteristics of planted grains, harvesting practices and post-harvest storage on the farm are the major determinants of the quality of grain supplied to our industry.

It is blending that plays a crucial role in giving our industry the capability to match our customers' needs for quality and price with the quality capabilities of our suppliers -- America's farmers. Not all American grain is U.S. No. 1. Blending helps provide a market for all grain, of whatever grade, and helps to support stronger price bids to producers. At the same time, it enables our industry to provide a more homogeneous product than otherwise would occur. If the market demand for blended grains did not exist -- or if its existence was precluded by legislation -- everyone in the marketing chain would feel the economic effects.

While S. 1977's authorization to prohibit blending is directed only to export grain, the repercussions such a restriction would have throughout the domestic marketing system are obvious. It is very conceivable that exporters -- confronting what would amount to a ban on blending any grain of less than U.S. No. 3 -- would be hesitant to contract for purchasing even some grain grading U.S. No. 3 for fear that such grain would not meet specs because of transportation delays or other reasons by the time the export blend was loaded.

This could result in a price-depressing glut of U.S. No. 3, 4, 5 and sample grade grain in the interior market whose only outlet would be for domestic use. That would create a virtual bonanza of bargain-priced grain for domestic feeders and processors -- but at the expense of U.S. farmers. Today, domestic millers and processors have more limited ability to blend grain of lower quality than export elevators because they handle comparatively lower volumes of grains and have less capability to segregate stocks. It remains to be seen whether these mills and processors would be able to absorb the "non-exportable" qualities of grain created by the restrictions envisioned under S. 1977.

At the same time, it also is unknown what impact this legislation could have on the volume of U.S. grains considered to be of "export quality." Conceivably, U.S. exporters could face a situation of either allowing the price of U.S. export grains to increase to above-natural-market levels -- an unlikely prospect given the highly price-competitive nature of the international grain marketplace -- or be forced to restructure their grain marketing practices to pass an even greater economic burden back through the grain marketing system than otherwise would occur.

There is an apparent perception that restrictions on blending will preserve a higher value for premium grades, with an overall net gain to producers. In fact, the economic interests of producers are not likely to be enhanced. Prohibition of blending won't increase the value of U.S. No. 1 grain, but it will decrease the value of U.S. No. 3, 4 and 5. Indeed, the issue isn't one of high-quality grain selling at a premium, but of non-premium grain trading at a discount.

The quality needs of end users can and do differ dramatically. Quality desires of one may not be the quality desires of another; one buyer's definition of quality today may be different tomorrow, as that buyer's needs and resources change. Quality is a balance between customer needs and price that changes constantly; it cannot be artificially defined. Corn millers, for example, sometimes will need higher moisture, sometimes lower. Flour millers regularly require very specific proteins. Yet corn moisture will vary from field to field, and wheat produced in adjacent counties may vary widely in protein content. We saw evidence of that kind of need in the marketplace last year when 11 percent protein wheat was trading at a premium to 13 percent protein. In that instance, as occurs virtually every day in the marketplace, marketers had to provide for specific customer requirements from the supplies provided by Mother Nature, not supplies produced under quality-control conditions in a factory. Blending is the marketing and conditioning tool that makes it possible to meet those needs.

This ability to blend serves not just the interests of marketers and their customers, but of producers as well. Last year, for example, a significant portion of soft red wheat produced in the Southeast and East suffered from light test weights. But producers still were able to market those crops at stronger prices because of the ability to blend those commodities with higher-test-weight wheat from other areas. A similar situation with 1988 soybeans also could be noted. Weather problems that year led to small, greenish beans in a significant portion of the crop. But without the ability to blend, those producers would have faced significantly sharper discounts and a difficult time finding markets.

These are only two examples from many that could be cited of how blending is used routinely to help producers find markets for their crops. Indeed, today's market-oriented producers use the same principles of blending regularly on farm, mixing commodities to meet market demand and maximize their earning potential. Farmers least of all can afford to open the door to blending prohibitions that close off, rather than create, market opportunities.

It also is important to note that the same benefits from blending accrue to our overseas customers. Foreign buyers make the same sorts of demands as domestic interests for specific quality attributes. Foreign millers need the same kinds of specific proteins and moisture contents. Yet many lack the facilities, resources or willingness to do their own blending to meet their needs. And many would

ask why they should, when the marketplace is constructed to do that job for them quickly, efficiently and economically, and in response to needs that change from day to day. Limiting the ability of the U.S. marketing system to meet those needs won't enhance our position in international markets. It may in fact harm us more.

Title IV. Export Requirements and Standards.

-- Section 401. Cargo loading requirements. Requires export grain to be loaded in a way that statistically favors neither the buyer nor the seller.

This section once again raises the question of cost versus value. Development of a loading plan that is absolutely neutral is an extremely difficult, if not impossible, task. Given that reality, the issue becomes a matter of choosing from among the practical options available.

One approach would be to move toward a loading plan that prohibits any subplot from exceeding a specified limit. Under that approach, the economic penalties of non-compliance to suppliers are so great that they have no choice but to load at the upper end of grade ranges. This approach certainly is in concert with the objective of loading only "cleaner" grain for customers, and giving the customer better than required. But it is **not** statistically neutral; it favors the buyer.

Customers already have the option of requiring this loading plan as part of a sales contract. But few elect to use it. Why? Because most recognize that such a plan imposes higher costs on suppliers, which in turn are passed through in the sales price of the shipment. Most customers vote on the question of "fair" loading plans with their pocketbooks — and they choose the existing system. Once again, our experience suggests that the buyer's concern with quality is tempered by economics.

This issue has been the subject of extensive discussions within our industry and among many of those involved in U.S. agriculture. In fact, FGIS is finalizing a rule that will revise the current cumulative-sum (Cu-Sum) shiploading plan. We continue to explore ways to address the concerns expressed by some with the Cu-Sum loading plan, and we will pursue modifications to Cu-Sum or alternatives to it that have greater statistical neutrality at realistic costs. But we must note that at this time the industry continues to believe that Cu-Sum is the best statistical means available to us of assuring delivery of a consistent, uniform quality at an economically realistic cost.

Title V. Classification, Grades and Standards Design Criteria.

--Section 501. Classification, grades and design criteria. Requires development and implementation of a "framework" for grades, classifications and standards built around an economic value-based system of class, grade, nongrade and optional factors. Class-determining factors shall separate grain into categories based on major end uses. Grade-determining factors shall relate to physical soundness and purity and fall into three grade categories (U.S. No. 1, 2 and 3). Nongrade-determining factors shall relate to physical condition, composition and intrinsic characteristics of the grain important to major end and intermediate users. Optional factors shall relate to those characteristics of conditions

important to a limited number of users. A separate grade also is established for grain not meeting the standards set for other grades. A schedule for implementing this system shall be submitted by Dec. 31, 1991.

The issue arising from this section isn't whether grade standards should be changed to reflect changing customer demands, but how best to implement that process. The industry firmly believes the existing mechanisms for addressing quality issues in relation to standards and grades are far preferable to a legislatively mandated revision.

Grain grades and classes have been modified repeatedly over the years in response to changing demands from the marketplace. That process continues today. Customer preferences, end-use needs and other changes needed to maintain the United States' preeminent position in world markets are reflected in revisions to U.S. standards made through a clearly spelled out regulatory process. As new technology and new information emerge through research and practical experience, they also are factored into the system. In addition, buyers always have the option to address end-use needs through contracts. This process works well, in our opinion, and it should be allowed to continue.

Additionally, it should be noted that the industry would prefer not to see nongrade-determining factors included as part of the official grade report. Customers who do not require such information should not be required to pay for the necessary tests for such determinations. It represents an additional and unnecessary cost that could be avoided simply by leaving such matters to contractual arrangements. That is, if buyers want such information, they can request the appropriate testing and pay for it. Those who don't, won't.

Title VI. Grain Quality Research and Testing.

-- Section 601. Sense of Congress concerning end-use performance research. Calls for increased emphasis on grain variety evaluation and objective tests for end-use properties of grain.

The industry believes such effort would be beneficial and helpful to clearing up many of the misperceptions surrounding these important subjects.

--Section 602. Sense of Congress concerning cooperation in objective testing. Calls for cooperative effort among FGIS, ARS and land-grant universities in grain-quality research.

The industry supports efforts to coordinate research, promote greater common understanding of these issues and develop objective tests for determining quality characteristics.

-- Section 603. Sense of Congress concerning tests for purity. Calls on FGIS to implement testing for mycotoxins and pesticide residues and incorporate limits for such "impurities" into the official grade classification system.

We share the concern of the bill's authors with the growing need to address food-safety concerns of domestic and export customers in a proactive fashion. But we believe it would be premature to incorporate tests for mycotoxins and pesticide residues into the official criteria until such testing devices are accurate, rapid and affordable, and yield consistently repeatable results.

That currently is not the case. Many tests for specific mycotoxins are complex, and in a significant number the results are often suspect; the tests are often highly expensive and available from only a limited number of laboratories. In short, we have neither the resources nor the reliability of testing to fulfill the section's requirements; even a good-faith effort to use what resources are available would create enormous costs to customers who may, or more likely may not, demand the comprehensive testing mandated by this section.

In the interim, the preferable course is to leave such testing to a contractual decision made by the customer. Those who want testing for specific mycotoxins or pesticide residues can request them. The industry will provide them, and will make the results part of the unofficial grade determination.

The industry is well aware of the growing concern for food safety among U.S. consumers and other customers. It is working to develop and provide the testing and certification procedures needed to deal with those concerns. But that process is likely to take some time to unfold; much work remains to be done not only in developing reliable and accurate testing methodologies but also in resolving the broader public policy discussion of what constitutes unacceptable food safety risks. As that process continues, it is far preferable to leave the grain-handling system sufficient flexibility to respond to individual customer's needs and wants without the straightjacket of legislatively imposed testing requirements.

The Bush administration in its 1990 farm-bill recommendations also has endorsed mandatory aflatoxin testing of all corn destined for export. It has been the practice of the grain industry to provide for such testing at any time buyers have requested it, and particularly in years and regions when aflatoxin has been a problem.

In fact, in the past two years, nearly all corn exported from the United States has been tested for aflatoxin — not once, but several times. Furthermore, testing practices have not been limited to corn destined solely for export. It is preferable, we believe, that testing remain a contractual arrangement between buyer and seller. By keeping it as such, testing will continue to take place in areas and times when it is warranted, without imposing an additional fixed cost in every export transaction.

Title VII. Variety Performance Information.

-- *Section 701. Seed variety registration.* Amends the Federal Seed Act to require the addition of quality-related performance information.

-- *Section 702. Use of variety information.* Requires warehouse receipts to state the name of the grain variety or the words "unknown" or "mixed" as appropriate.

-- *Section 703. Survey of grain varieties.* Requires NASS to compile a report on grain varieties with data related to end-use properties and agronomic performance.

This title in general is best addressed by the seed industry. Generally, we support more quality-related information regarding seed performance being made available to producers, although doing so on the seed label probably is not the best mechanism for conveying it. But we can comment regarding section 702. This sort of warehouse receipting could prove difficult to enforce without broad support at the grass-roots level. Effective labeling will depend upon the willingness of farmers to maintain the identity of grain deliveries; without that first step, the informational objectives sought in this title will be difficult to realize.

Title VIII. Price Support Loan Incentives for Clean Grain.

-- *Section 801. Quality goals for Commodity Credit Corporation programs. Requires the secretary of agriculture to consider the direct and indirect effect of CCC programs on crop and livestock quality.*

-- *Section 802. Price support loan incentives for clean grain. Expresses the sense of Congress that for loan programs in 1991 and beyond, premiums should be paid for quality; grain pledged as collateral for loans shall be inspected to determine quality relative to the premiums; uninspected grain shall be ineligible for premiums; forfeited grain shall be inspected for quality; the loan program should be adjusted to reflect changes in condition and quality.*

It is our strong and overriding belief that to the maximum extent possible, CCC's price support system -- including the premiums and discounts it assesses for regular and farmer-owned reserve grain -- should approximate actual market-scale levels as closely as possible. To the extent that CCC's premium and discount schedules for various price support grains accurately reflect market levels, grain entering the loan program will contain the quality characteristics and factors the grain marketplace -- buyer and seller alike -- desires and demands.

There are important market-based reasons why CCC's price support premiums and discounts should reflect market levels, and not be set artificially high or low. If CCC provides loan incentives for "clean" grain that are out-of-step with what the market needs, it is likely that the higher-quality grain would flow first into the loan program. Ironically, such higher-quality stocks then would be isolated from market channels -- not available to them -- creating a legislative paradox of encouraging the sale of lesser-quality grain into the marketplace in the name of better grain quality. Certainly, a system in which higher-quality grain is "locked up" in government farm programs, inaccessible to the market, is undesirable and should be avoided.

Further, it should be emphasized that the quality-related demands of the marketplace can vary dramatically from one crop year to the next, or within a given crop year. For example, as alluded to previously, while wheat traditionally has generated premiums for higher levels of protein, this was not the case in the drought-affected hard red winter wheat crop of 1989. In this crop, protein premiums declined because protein content was consistently high in most of the hard red winter wheat crop. In fact, domestic customers began paying a premium for lower-protein wheat.

There are other drawbacks in attempting to use farm programs for broader purposes -- be they laudable quality considerations or environmental protections. Farm programs are designed for a different purpose. When they are asked to take on additional functions, unintended -- often destructive -- side effects can result.

That is not to say improvements cannot be made in farm programs that will result in quality enhancements. But to put it in context: the marketplace cannot overcome the farm programs in determining what crop a farmer will plant, let alone its quality.

Finally, several practical questions need to be addressed concerning a "quality-incentive" payment. How would such payments be funded? Would additional funds be required, or would the cost be derived from funds now used for other USDA programs?

Title IX. Farmer-Owned Reserve Quality Requirements.

-- *Section 901. CCC receival standards for Reserve grain. Grain forfeited to the CCC shall equal or exceed the quality of grain pledged to it. Discounts shall be used to discourage forfeiture of low-quality grain.*

-- *Section 902. Entry quality standards for all grains. Requires the secretary of agriculture to set quality standards for grain stored under the program. Requires rotation and maintenance of stocks to ensure quality.*

Title X. Quality Requirements for CCC-Owned Grain.

-- *Section 1001. Quality requirements for CCC-owned grain. Requires establishment of minimum quality standards for grain stored with CCC. Requires monitoring of grain to maintain quality. Requires disposition of grain not meeting minimum quality standards, and prohibits blending of this grain with any marketed as grades U.S. No. 1, 2 or 3.*

We believe CCC should impose market-scale discounts and premiums on farmer-owned reserve grain if and when it is forfeited to CCC. However, one of the potential quality-related benefits of the administration's proposals concerning the 1990 farm bill is that the farmer-owned reserve would be subject to annual contracts, with producers retaining full latitude to access such stocks during the course of the marketing year as they see fit. This would be an additional feature to encourage proper rotation and marketing of reserve stocks.

Two other general comments need to be made concerning the quality of grain stored as collateral for price support loans:

First, we believe CCC should examine seriously the feasibility of having ASCS county offices spot check on a random basis that grain stored on the farm that is pledged as collateral for price support loans. This might be particularly appropriate for farmer-owned reserve loan collateral stored for extended periods. This would enable CCC to detect quality problems in price support grain sooner than currently exists, which now does not occur until grain is forfeited and delivered to a warehouse.

Second, CCC has adopted an aggressive policy of selling all its grain that grades U.S. No. 3 because of damage, or U.S. No. 4, 5 or sample grade into the market as soon as such inventory is detected. In fact, CCC even amended the Uniform Grain Storage Agreement contract that takes effect April 1 to require warehousemen to telephone CCC immediately -- even before the warehouse receipt is issued -- whenever any grain meeting these lower-quality criteria is forfeited and delivered to the elevator.

Title XI. Export Enhancement Program.

-- *Section 1101. Export Enhancement Program. Authorizes drafting of EEP contracts that would facilitate the exportation of high-quality grain.*

EEP was established as a means of combating unfair trade practices by competing exporters. The quality of EEP grain has never been an issue. We do not believe that whatever value EEP may have in sending a strong signal to our trading partners concerning unfair trade practices should be diluted with nebulous quality objectives.

Title XII. Crop Insurance Coverage for Loss of Quality.

-- *Section 1201. Crop insurance coverage for loss of quality. Makes crop insurance available to producers for grain falling into grade U.S. No. 3 or below.*

We do not oppose the concept of offering coverage for quality losses through the Federal Crop Insurance Program, provided such a program is actuarially sound. Such a program would enable farmers to make their own judgments of the importance of quality as an element in their own marketing programs. Further, coverage through FCIC provides a monetary incentive -- the insurance premium -- for producers to preserve the quality of their grain to the maximum extent possible.

Title XIII. Disaster Payments for Loss of Quality.

-- *Section 1301. Disaster payments for loss of quality. Authorizes disaster payments for grain falling below grade U.S. No. 3.*

We do not favor offering disaster payments for quality losses, since such coverage would be duplicative of coverage through crop insurance. Further, we believe disaster payments offer less incentive to producers to encourage sound growing, harvesting and storage practices, since they have less monetary investment in preserving quality. Disaster payments also would be less likely than an insurance program to reflect changing market conditions. Furthermore, such a program would represent a substantial cost to the federal government.

Title XIV. Assistance for Improvements in Grain Quality.

-- *Section 1401. Authority to assist farmers and elevator operators.*

If the bill's provisions are enacted, many elevators and producers will need assistance with the substantial costs of compliance. But such a program is premature if Congress takes the wiser course

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of allowing producers, handlers and others in the agricultural sector to continue to deal with quality issues through on-going mechanisms such as the Grain Quality Workshops and the existing regulatory process. The industry is sensitive to the legitimate quality challenges facing U.S. agriculture and will institute required changes in equipment and facilities without extensive government financial assistance, if allowed to do so.

-- Section 1402. Report concerning assistance for improvements in grain. Requires a report to Congress by June 30, 1991, on alternative forms of financial assistance needed to implement grain-quality improvements.

The industry believes such a study could be useful.

The Price of Quality

Mr. Chairman, we trust our comments will not be misinterpreted to be opposition to the legitimate concerns of this panel, American producers or any other member of the U.S. agricultural community concerning the subject of grain quality. Quite the contrary. As we have attempted to explain, the delivery of grain meeting the quality demands of our customers is absolutely critical to our continued existence and future prosperity.

It is because we take the issue of grain quality so seriously that we want to make certain the tough questions are asked and addressed in a way that serves the interests of all of U.S. agriculture. As we said earlier, the issues surrounding grain quality are complex and multifaceted, and there are few simple or easy answers.

At the heart of S. 1977 are the central questions of how and who defines grain quality, and what role quality can play in advancing the economic interests of U.S. agriculture. Our industry, drawing from its collective experience in helping the U.S. farmer build our leading role in world grain markets, has its own perspective to share concerning the role of quality in the marketplace.

The quality of grain grown in the United States, as in the rest of the world, presents a challenge that requires effective management. It is a complex and crucial management problem that begins at the farm level as producers decide first what crops, and then what varieties, they will produce each season. Add to that equation the climate and seasonal weather patterns, the producer's labor and inputs, and finally how crops are harvested, handled and stored before leaving the farm, and one begins to appreciate why grain quality is an issue that strikes close to home for the producer.

It is our industry that serves the vital need of utilizing the raw materials -- the grains and oilseeds supplied by the farmer -- to meet the quality and price needs of our customers, be they foreign or domestic. For our customers, quality is not an unchanging absolute. Users of the same kinds of grain frequently require different quality specifications needed to meet their individual needs and intended uses. On a daily basis, each user balances those needs against the costs of products that can fill them to determine what makes economic sense.

Our industry's job is to match the individual user's needs with available supplies that best meet those quality specifications and the customer's cost constraints. That is why quality standards should not be divorced from marketplace realities. If they are, they will thwart -- not contribute -- to our efforts to achieve expanding exports and better returns for America's producers.

The legislation before this panel proposes far-reaching changes in standards and guidelines related to grain quality, as well as extensive changes in grain-handling processes and equipment that could have significant economic implications for all of U.S. agriculture. The underlying assumption is that our customers will be willing to pay higher prices or increase purchases of U.S. commodities in quantities sufficient to cover these additional costs.

The collective experience of our industry, however, leads us to question that assumption. Our industry always has made -- and continues to make -- aggressive efforts to provide customers with whatever quality requirements they request and for which they are willing to pay. It's simply in our own self interest to do so.

As a witness appearing at the previous hearing before this panel has verified, few customers are willing to pay the higher costs for quality. We see no widespread evidence of additional demand that would compensate for the added costs imposed upon the producer and the domestic grain-handling industry by S. 1977.

If buyers are unwilling to pay the price for tougher standards, the costs will be borne by someone else -- most likely the producer, who will inevitably experience lower cash-price bids for his or her commodities. For our part, the industry has been unwilling to make unilateral changes that would pass these sorts of costs back to the producer when there has been a lack of demonstrable benefits in terms of increased market demand.

We can only estimate the up-front costs of implementing some major provisions of S. 1977. Although many U.S. grain-handling facilities already have cleaning equipment, the vast majority would incur capital costs for installing such devices. At a country elevator, those costs might amount to between \$100,000 and \$500,000, depending upon whether a separate building would be needed to house new cleaners. At a major export house, the cost would reach as high as \$4 million. We base these estimates on the assumption that the same equipment could be used to clean wheat, corn and soybeans. If separate equipment is needed for each, the costs would be greater.

We also have conducted experiments to ascertain how we might meet a half-percent dockage requirement for export wheat. The cost of procedures that would be entailed in such a requirement amounts to about 10 cents per bushel, based upon a wheat value of \$4 per bushel. Allowing for recovery of about half that value through the sale of the collected screened material as a feed ingredient, there is a net additional cost of roughly a nickel per bushel.

In terms of productivity, there also are costs inherent in such a dockage requirement. Our loading rates were reduced to about half of normal. Said another way, our cost of loading roughly doubled.

We do not intend for these figures to be taken as any sort of absolute measurement on the costs of S. 1977. Rather, they are used to illustrate the point that the changes proposed in this legislation carry a price tag, and will have major economic implications for our industry and all of U.S. agriculture. Thus, we urge a cautious, consensus approach to this issue.

Steering a policy on grain quality through the web of factors involved will require a continuing realization of the complex relationships that arise between buyers and sellers that concern price and service. It will require careful attention to the facts and to economic implications. In other words, it will require a process that ensures full consideration of all the implications of any proposed changes. And we believe, it will require the active support of all those who are affected by such changes.

Conclusion

In closing, we want to address the allegation that our industry is intransigent or unresponsive to grain quality concerns. Nothing could be further from the truth. Our commitment has been demonstrated time and time again through concrete and substantive proposals for change that have emanated from within the NGFA and other industry organizations, and through the Grain Quality Workshop process.

After all, our industry has an overriding vested interest to capture every available market opportunity. Perhaps of all sectors of U.S. agriculture, our industry has the most to gain by providing the qualities demanded in the marketplace. Conversely, we have the most to lose if we don't. That is particularly the case today, as our industry has seen the end of the storage era and is reliant almost totally on marketing revenues to make a profit. No firm in our industry makes money by ignoring or turning aside opportunities to sell grain. If we don't move grain, we're out of business.

That is why we do not divorce grain quality considerations from marketplace realities. And it explains why the U.S. grain industry serves as the "supermarket" to the world when it comes to offering a full spectrum of qualities of grains and oilseeds in the volumes demanded by our customers. It would be extremely short-sighted to impose restrictions on our production and marketing system that impede our flexibility to be price competitive in all grains and all qualities. To do so would be to turn our back on market opportunities, not capture them. To expand market opportunities, our industry must be able to serve the full range of customers, each with their own specialized quality demands and end-use needs, and each with their own price constraints.

Mr. Chairman, our industry has been actively engaged in efforts to positively address the subject of grain quality. Much of what is proposed in S. 1977 is in concert with work being done by our industry. We hope to continue working with you on the issue to identify specific steps we can take to move us toward our mutual goals for U.S. agriculture in a way that reconciles quality concerns with marketplace realities.

Thank you.



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Testimony by Ervain Friehe, Chairman
Nebraska Wheat Board

Subcommittee on Research and General Legislation
Committee on Agriculture, Nutrition, and Forestry
United States Senate

February 22, 1990

Mr. Chairman and Members of the Committee. My name is Erv Friehe from McCook, Nebraska and I am testifying today as Chairman of the Nebraska Wheat Board.

I want to first thank you for this opportunity and I commend the Subcommittee on Agricultural Research and General Legislation for the fine work you are doing to improve the quality and competitiveness of U.S. grain in international trade.

The Nebraska Wheat Board is a state agency. We are responsible for protecting and stabilizing the economy of Nebraska's wheat producing areas and we have the power and duty to conduct any program for the marketing of Nebraska wheat.

The Wheat Board's only source of funding comes from an excise tax that is levied on all wheat producers in the state when they market their wheat at the first point of sale. There are approximately 18,000 wheat producers in Nebraska. Therefore, the Wheat Board seeks out consensus on issues such as grain quality legislation and tighter grain standards before we promote changes.

Approximately one year ago, the Wheat Board released the results of a national wheat grower opinion poll which surveyed 649 wheat producers in states representing 80% of the nation's wheat production. Rockwood Research of St. Paul, Minnesota, a marketing service of Farm Journal, Inc., conducted the survey. The results (Exhibits A-E) show that over 90% of the nation's wheat growers support tighter grain standards and believe that tighter standards and cleaner wheat will both benefit them as farmers and make the U.S. more competitive in the world market. So it's a well documented fact that growers do care and they are definitely willing to participate in changes that improve the quality and competitiveness of U.S. wheat.

As a country, we need a national commitment to improve the quality of the wheat we market in international trade. Other U.S. industries that have failed to invest in quality improvement have simply become uncompetitive. In reality, the U.S. is uncompetitive on the basis of quality in the wheat we export. Ample documentation exists to verify that fact (see Exhibits F-I).

The commitment to improve grain quality and cleanliness will not go without cost, but the cost should be viewed as both an investment and a market development tool. Some in the industry suggest that farmers will incur discounts if grain standards are "tightened up," but farmers are already discounted for the wheat they market if it isn't as good or better than U.S. Grade Number 1 for grade factors including the level of total defects. Hard Red Winter wheat producers are also discounted for test weight levels that fall below 60 pounds which is currently required in Number 1 grade. Yet we receive no premium for wheat that tests 61, 62 or 63 pounds (see Exhibit J). I have recent firsthand knowledge of a case where a Nebraska farmer sold wheat weighing 55 pounds. His test weight discount was 4 cents per bushel. Yet the elevator will blend that wheat and sell it all for the Number 1 or Number 2 market price. So, what was the justification in such a discount?

Farmers also get hit with weight discounts through another trade practice. When wheat is marketed by the farmer, grain elevators test for the dockage level and deduct that percentage from the weight that the farmer is paid for. At some elevators, shrunken and broken kernels, dust and foreign materials are screened out and also deducted from the weight of the wheat that farmers are paid for. This approach, referred to as "the dock," actually means that some farmers are being paid for only clean wheat. It's easy to understand why farmers are strong supporters of measures that will result in cleaning up U.S. wheat throughout the U.S. marketing system and assuring its movement into the foreign market.

At this Subcommittee's February 8 hearing, you heard from a panel of foreign buyers including Deputy Chairman Michael Ageev from the Soviet buying agency. I had the pleasure of meeting Mr. Ageev in 1985 when I participated in a USDA grain quality survey team to the USSR. Quality problems with U.S. grain were evident at Soviet import points and I'm pleased to see that Mr. Ageev and Mr. Shestopalov provided specific comparisons of U.S., Canadian and Australian wheat quality and cleanliness factors. We are grateful to the Soviet grain officials for their candor on this marketing and competitiveness issue (see Exhibits K and L). The Nebraska Wheat Board is grateful to this Subcommittee for having provided a forum where the largest customer for Hard Red Winter wheat could provide the buyers view and express their quality concerns. That hearing provided the vehicle for following one of the most fundamental rules for successful marketing which is listening to the needs of your customer and solving their problems.

The Grain Quality Incentives Act of 1989 (S.1977) provides clear direction for our nation to move toward an era of leading rather than following in global grain trade competitiveness. The bill establishes goals and a timetable for implementing improvements and incentives. Through this approach, Congress provides the essential public policy leadership necessary and offers the Executive Branch the framework to expedite positive change.

SPECIFICS ON S.1977

Title I, Section 101

A Grain Quality Coordinator is an excellent proposal because the position can serve the function of pulling all elements of the grain quality puzzle together. The quality improvement platform or "three-legged stool" can provide a solid foundation for progressive and systematic change through improved varietal development, grain standards and market incentives.

Title I, Section 102

This section offers the Secretary of Agriculture the opportunity to analyze the benefits of grain cleaning throughout the storage and marketing process. The benefits to food processors and consumers from clean, storable grain should be reviewed and the savings to taxpayers analyzed when government-owned and stored grain is kept clean and free of insect infestation, mold and fumigants. The extent to which farmers are already absorbing the cost for clean grain through grade and weight discounts should be ascertained.

Combined with the fact that key foreign buyers such as the Soviet Union tell us that the U.S. will suffer lost sales in the absence of quality improvement, additional analysis should review importing countries where Canada, Australia and other competing exporters have made inroads at the expense of U.S. wheat sales. Special attention should be focused on cash paying importers to determine their degree of quality orientation as it relates to preferred sources of supply.

Title I, Section 103

The standardization of unofficial inspections at grain delivery points is another positive plan. It should be coordinated with and through the existing official inspection services to maintain both integrity and credibility within marketing channels. Producers deserve to be treated uniformly because samples taken at the point of first sale are used to determine grade and the amount of weight discount for moisture, dockage and other factors.

More official inspections should be encouraged because the official inspection service system is a means of promoting quality control from interior points throughout the marketing system. The more official inspections, the greater the data base for monitoring quality improvement and the higher the level of integrity in the system.

Uniformity should also be ensured for testing procedures and testing equipment. Moisture testing equipment, where regulated at the state level, should be tied back to FGIS standards. Currently there is no uniform system.

An education and information effort should be launched utilizing official inspection service agencies. The effort should be targeted to producers and the grain elevator and marketing system. The role and importance of official grading should be emphasized.

along with the importance of quality control. The program should be funded with 2 to 3% of the Supervision of Official Inspection Agency User Fee Fund within FGIS.

Title I, Section 104

The international harmonization of standards and tests is another positive concept. The report on this issue should provide valuable information as the grain quality improvement agenda continues. In the global arena of world wheat trade, harmonized tests and standards should facilitate trade by establishing the "terms of trade" between all importers and all exporters on a consistent basis.

Title I, Section 105

Food purity and safety are important issues in public policy. Farmers take pride in producing and marketing high quality wheat for the world's consumers. Farmers are active participants in assuring that pure and safe grain moves from their farms to the next stage in the marketing process.

FGIS is the only agency in a position to monitor grain quality as it is marketed. FDA and EPA regulations should be established through a coordinated information exchange with FGIS. The realities of grain storage, handling and marketing should be factored in to help guide policies and regulations on contaminants and residues. Market and farm program incentives for grain cleaning will go a long way toward maintaining a pure and safe supply of grain in the United States.

Title II, Section 201

The cleanliness of U.S. wheat exports must be improved as part of our national commitment to excellence in exports. Section 201 provides the policy goal, the direction and the timetable for implementation. Combined with Title V, this section establishes a clear framework for the marketing of cleaner, more competitive grain. Cleanliness should be more clearly defined and nongrain material should include dockage as well as foreign material when limits are set for easily removable material in wheat.

The success of Title II will be greatly facilitated through the assertive implementation of Title VIII when substantial premiums for clean grain are implemented through the ASCS price support loan program.

Title III, Section 301

This section gets right to the heart of the issue in achieving customer satisfaction for U.S. wheat. The wheat we export should meet or exceed the overall quality and end-use performance of wheats that our competitors market to foreign buyers.

Tighter grade factor limits should prevent the blending of low quality into higher quality shipments. It should be remembered that farmers are discounted for low quality grain already. Consequently, such grain must be channeled away from normal, high quality grain through restrictions or prohibitions on blending.

At this point, I want to draw your attention to Exhibits M-T and compare them to Exhibits F-I which show some of the results of two cargo sampling projects. One compared U.S. wheat to Canadian, Australian, French, Russian and cargoes from other export origins arriving in European ports in 1959 and 1960. Exhibits F-I compares U.S., Australian and Canadian wheat cargoes arriving in Japan during the past five years. The sampling results show that the United States has achieved little in wheat cleanliness in the past 30 years. Thirty years ago, U.S. wheat cargoes had three times as much dockage, foreign material and total cleanout as our major competitors. Today we still have double the cleanout, clear justification for buyer complaints.

Title III encourages optimum use of the regulatory system by requiring the administrator to first evaluate changes in factors and factor limits in combination with a possible prohibition on blending. Factor limits should be consistent for both domestic and export grain.

Title IV, Section 401

This section underscores the need for a substantially revised CUSUM loading plan. In order to assure true customer satisfaction, every sublot loaded for export should conform to the buyers contract and grade specifications. This development will demonstrate an assertive marketing strategy through a customer-oriented loading plan. It will help establish the United States as an exporting nation that places a high priority on buyer needs.

Title V, Section 501

This section appropriately places an essential focus on our overall system of grades and standards. The fact that U.S. grain standards allow high levels of foreign material, total defects and wheat of other classes in our best grades warrants serious scrutiny. The fact that dockage in wheat has never been made a grade factor and is shipped with wheat, while farmers incur a weight discount for the percent of dockage when they sell wheat, is inconsistent with quality-oriented marketing.

Today's grain production, storage and handling technology offers the U.S. marketing system the opportunity to catch up with our competitors.

Official grades and standards for wheat should be modernized in tandem with price support incentives for clean grain. Title VIII allows this coordinated approach. And while the clean grain incentives are a definite priority, it should also be recognized that current grade factor limits on damaged kernels, foreign material and total defects are clearly set up to allow for blending lower quality wheat after the grain leaves the hands of the farmer. The FGIS report on the quality of the 1989 wheat harvest demonstrates that the vast majority of the new crop contained levels of total defects well below grade Number 1 limits. It is only the minority of farmers that deliver wheat with high defect levels.

Grade factor limits should not be set for that minority nor for the benefit of the grain trading sectors interest in blending.

In Hard Red Winter wheat, a grade adjustment should be made so that 58 pound test weight grades Number 1. Currently HRW is required to weigh 60 pounds per bushel to grade Number 1, while Hard Red Spring and White wheat grade Number 1 at 58 pounds. This change will eliminate the unfair practice of HRW producers being discounted for test weight below 60 pounds while HRS producers receive premiums for wheat weighing above 58 pounds (see Exhibit U) and are not discounted until their wheat drops below 58 pounds. This change will create fairness and consistency in the marketplace while maintaining the importance of appropriate levels of test weight as a grade factor.

An economic value-based system for class, grade, nongrade and optimal determination factors should also result in a greater focus on varietal development and producer interest in quality-oriented varieties. Grain that is unsuitable for normal intended uses should be defined as "unblendable grain" and not allowed to deteriorate normal quality grain.

Title VI, Sections 601, 602 and 603

The Agricultural Research Service of USDA and the land-grant universities play a pivotal role in grain quality improvement for the future. Wheat research and testing and end-use property analysis is essential for the benefit of all sectors of the wheat industry and for consumers in the United States and in foreign markets. Additional federal funding should be earmarked for both the Agricultural Research Service and the land-grant university wheat breeding, research and quality programs.

The intent of Sections 602 and 603 should be pursued through a coordinated approach with FGIS, FDA and EPA. Adequate funding should be provided to insure that testing and residue limits do not outpace the ability of the grain marketing and production system to phase in new practices that reduce the need for pesticides and fumigants.

Title VII, Sections 701, 702 and 703

Variety performance information offers an excellent opportunity to expand the use of important and valuable varietal information. After consulting with University of Nebraska Wheat Breeding specialists, the Nebraska Crop Improvement Association, and the Seed Trade Association, we believe that Section 703 can be used to achieve the goal of expanding the level and usefulness of variety performance information throughout the industry and the marketing system.

Sections 701 and 702 could impose costs on the seed industry for labeling and could cause a liability problem when environmental conditions prevent a variety from achieving expected agronomic and end-use quality performance. According to seedsmen, Section 702 could also lead to the misuse of the term "mixed" when applied to

varieties in a manner that currently causes discounts when "mixed" is applied to a combination of more than one class of wheat in the grading and marketing process. Therefore, the Nebraska Wheat Board suggests the deletion of Section 701 and revised language in Section 702 to focus on proper variety identification while allowing for "multiple variety marketing" as is currently the case. New marketing strategies by variety can still be encouraged through Title VII.

We recommend the retention and assertive implementation of Section 703, Survey of Grain Varieties. For a number of years, the Nebraska Wheat Board has picked up the cost of the Ag Statistics Service wheat variety survey in Nebraska. We urge renewed and expanded funding for variety surveys by USDA and a far-reaching information campaign to disseminate data on intrinsic quality and the role of quality in the international marketplace. As part of a national commitment to quality improvement, USDA should launch an assertive information and education campaign to all wheat producers to encourage quality-oriented production and marketing.

Variety information can be a powerful marketing tool as is currently being demonstrated by the Arizona Grain Company of Casa Grande, Arizona. Their identity-preservation program guarantees that each variety sold is 100% what is contracted for. They currently have 400 grower-members through their subsidiary Valley Seed Company and their program has made them a solid competitor in the international grain market (see Exhibit V). Expansion of this concept through greater knowledge of varietal end-use performance will improve marketing potential for the entire U.S. wheat industry.

Title VIII, Sections 801, 802 and 803

Substantial loan and storage payment premiums should be provided through the Commodity Credit Corporation price support loan program to encourage the harvest of even cleaner grain from farm fields. Working in combination with Title XIV, clean wheat loan premiums through ASCS will also encourage the use of grain cleaning equipment prior to long term storage and during the marketing process as wheat moves from farm storage and through the grain elevator and handling system. Producers should be paid the same storage payment as commercial warehouses for on-farm stored grain.

Low quality wheat varieties should be identified based on low and undesirable end-use value and such varieties should be made ineligible for price support loans. ASCS can lead the market and enhance the national commitment to quality improvement through assertive implementation of the incentives provided for in Titles VIII and XIV.

Title IX, Sections 901 and 902

Clean grain loan premiums will facilitate the maintenance of high quality, clean grain in the farmer-owned reserve. Incentives should be made stronger so that only high quality, clean wheat is stored in the reserve program. Such practices and conditions will

ensure that wheat is in high quality when it comes out of the reserve and enters marketing channels. A commitment to quality in reserve-stored grain will help upgrade quality throughout the system and enhance the image of U.S. wheat.

Title X, Section 1001

There should be minimum acceptable standards for CCC-stored grain. Title X, along with Title IX, can ensure that quality is maintained if commercial warehouses with CCC storage contracts are subject to the same standards as producers and are responsible for grain going out of condition.

Off-quality wheat coming out of CCC storage should be forced into industrial or feed use and should be monitored through marketing channels to confirm that it has not been blended into higher grade wheat. CCC's grain catalog and bid system should be regulated to prevent such blending.

Title XI, Section 1127

The Export Enhancement Program should be used as a strategic marketing tool to target quality-conscious markets. Importers should be encouraged to specify high quality, clean wheat in their EEP contract bids and USDA should encourage the drafting of EEP export contracts that facilitate high quality, clean wheat exports. Higher EEP bonuses should be provided to exporters who offer superior quality wheat for the EEP program. Higher EEP bonuses should cause premiums for clean wheat to filter back through the marketing system and into the country elevator network which should transfer to producers.

Title XII, Section 1201

Federal crop insurance should make protection available to grain producers against loss in the quality of grain.

Title XIII, Section 1301

In the same context as Title XII, disaster payments should be made that include loss of grain quality if damage or contamination is in excess of factor limits established for grade Number 3.

Title XIV, Section 1401

This section is an excellent, proactive approach to promote an investment in upgrading the quality of grain at all stages in the marketing chain.

Low interest, facility-type loans should be authorized, funded and promoted for the purchase and installation of grain cleaning equipment on the farm. Similarly, low interest loans should be made available for larger scale, high speed and state-of-the-art cleaning and handling equipment in grain elevators.

Grants should be made to producer groups, co-ops and grain elevators who provide a strategic plan to increase exports through a marketing strategy that promotes clean, high quality wheat to foreign markets.

This program could be combined with market development programs through the Foreign Agriculture Service. FAS cooperator funds should be earmarked for the promotion of high quality, clean wheat as a method of beating the competition from Canada, Australia and the EEC.

Is there a market and a demand for high quality, clean wheat? Absolutely! The Nebraska Wheat Board has facilitated a number of high quality, clean wheat sales in the past two years. This "Clean Wheat Initiative" is serving to begin the process of improving the reputation of U.S. wheat in world trade.

The most recent sale in January was a full cargo of clean wheat to Europe. The wheat contained only 0.3% dockage and only 1.8% total defects which means it approached the cleanliness of Canadian and Australian wheat, although still not as clean.

There was so much interest in this cargo of clean, U.S. wheat that mills in Belgium, France, Switzerland, The Netherlands, West Germany, Greece, Finland and England have purchased portions of the cargo. Flour from the shipment has gone into Poland and East Germany as well. The buyers paid from \$2.00 to \$2.50 per metric ton premium for the cleaner, higher quality wheat. That level of premium (7 cents per bushel) more than offsets the estimated cost of 2 to 3 cents per bushel for cleaning wheat as reported in the September issue of USDA's Farmland (see Exhibit W). Now the key is to create cleaning incentives throughout our U.S. marketing system. Congress is the essential leader in establishing such a quality-oriented, national policy. USDA is the key player in the second stage, which is implementation.

In summary, the U.S. will become more competitive and our wheat will be in greater demand if the Grain Quality Incentives Act of 1989 becomes law and is then assertively implemented. I request that this testimony and the attached exhibits be made part of the official record.

On behalf of the wheat producers in Nebraska, I want to thank this Subcommittee, the sponsors and co-sponsors of S.1977 for taking the leadership and taking such an important step to enhance marketing opportunities for U.S. wheat in international trade.

Rockwood Research

1751 West County Road B • St. Paul, MN 55113 • 612-631-1977 • FAX 612-631-8198

MARKETING RESEARCH IN AGRICULTURE

NATIONAL AGRICULTURAL POLICY POLL
Data Tables
National and State Maps

November 1988

Includes National Wheat Grower Opinions On:

New Federal Farm Legislation
Supply Management
Price Support Levels
International Farmer Cooperation
Federal Grain Standards

Nebraska Wheat Growers Association
P.O. Box 57
Ogallala, NE 69153

Nebraska Wheat Board
P.O. Box 94912
Lincoln, NE 68509

BACKGROUND AND METHODOLOGY

The objective of this National Agricultural Policy Poll is to ascertain wheat grower opinions on a national basis concerning critical aspects of future U.S. farm and trade policy.

To meet the objective, Rockwood Research, a marketing service of Farm Journal, Inc., conducted telephone interviews of 649 wheat growers in the nation's major wheat producing states. Calls were made to the majority of the states between November 13 and 17 and to the Nebraska wheat farmers between October 4 and 18. The random interviews were completed using the exclusive FARMAIL data base which is the most up-to-date list of wheat growers in the nation. The states where producers were surveyed accounted for 80% of the nation's total wheat production in 1986 and 1987.

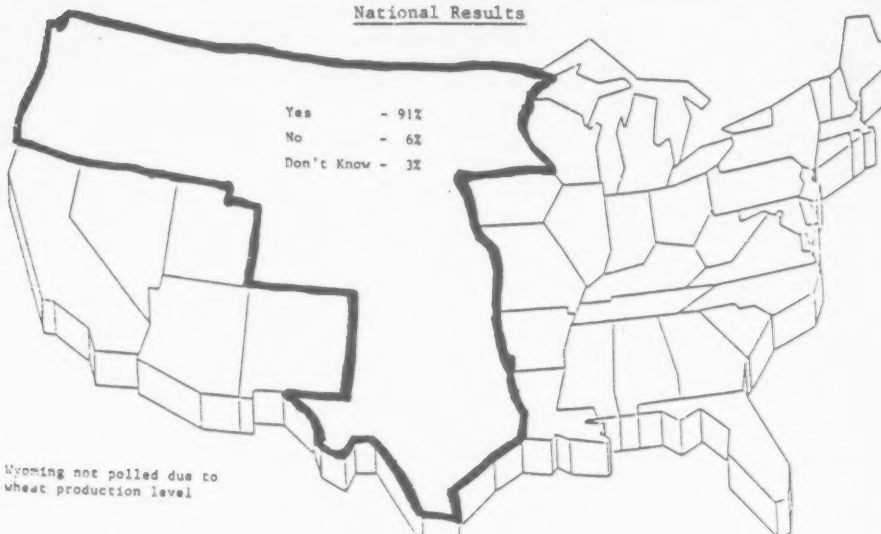
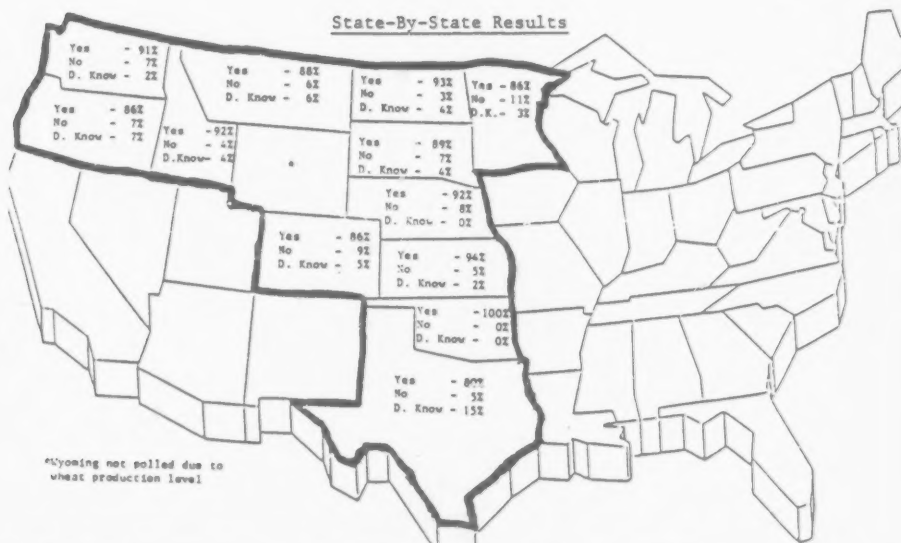
The questionnaire used in this study was a computer program written on Rockwood's Hewlett Packard System and Computers For Marketing Corporation (CFMC) software by a Rockwood Research spec writer. The data for this study was collected by using Rockwood's in-house, state-of-the-art interactive data-gathering system (CRT terminals).

All interviews were conducted from the centralized telephone facilities of Rockwood Research by professionally trained agricultural interviewers. All questionnaires were evaluated before inclusion in the data base for this study. A sample of all interviews was randomly monitored by supervisors to ensure that all work was accurately accomplished. The data was edited, processed and tabulated utilizing Rockwood's in-house data processing facilities specifically designed to handle market research projects.

Margin of Error: Given the sampling plan used, the number of interviews, and the method of selection, total sample results are accurate at a 95% confidence level with a margin of error no greater than approximately plus or minus 4.0%. This margin of error is associated with total sample results only.

Exhibit C

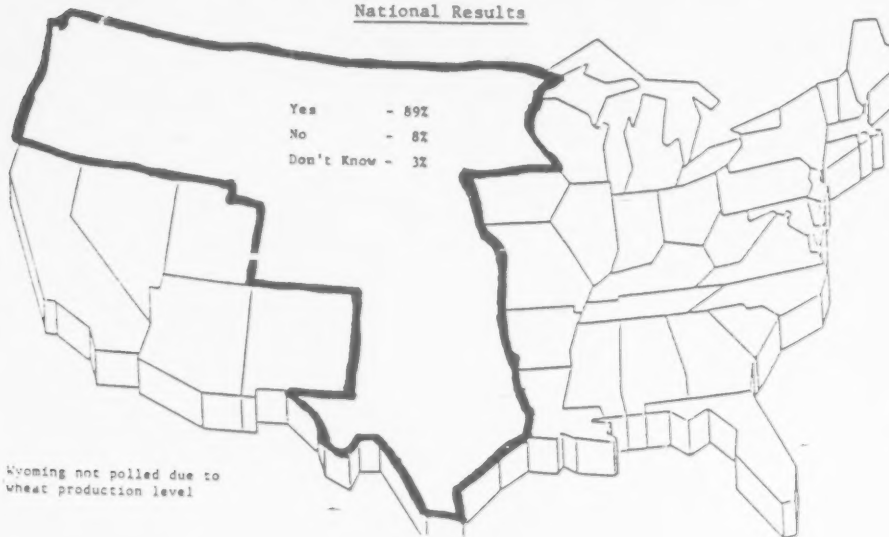
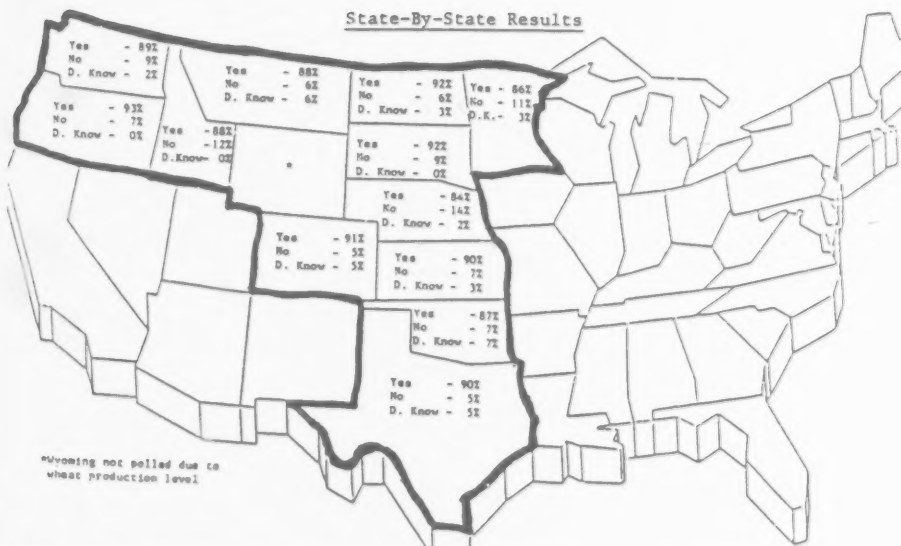
DO YOU BELIEVE THAT CLEANER GRAIN THROUGH TIGHTER GRAIN STANDARDS WILL MAKE THE U.S. MORE COMPETITIVE IN THE WORLD MARKET AND INCREASE U.S. EXPORTS?

National ResultsState-By-State Results

Area polled represents 80% of the entire nation's wheat production.
Totals may not equal 100% due to rounding.

Exhibit D

DO YOU BELIEVE THAT TIGHTER GRAIN STANDARDS, STRICTER GRADE REQUIREMENTS,
AND CLEANER WHEAT WILL BENEFIT YOU AS A FARMER?

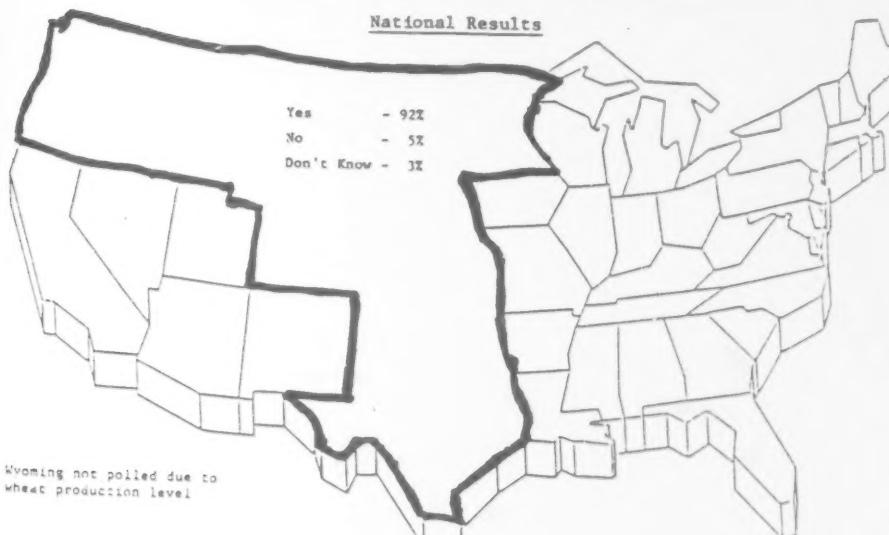
National ResultsState-By-State Results

Area polled represents 80% of the entire nation's wheat production.
Totals may not equal 100% due to rounding.

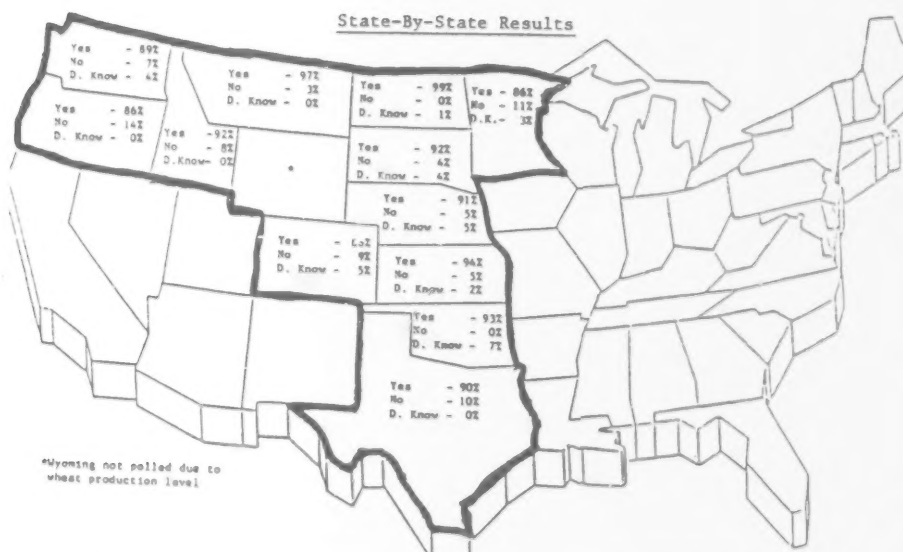
Exhibit E

DO YOU SUPPORT A CHANGE IN U.S. GRAIN STANDARDS FOR WHEAT THAT REQUIRES
U.S. WHEAT TO BE AT LEAST AS CLEAN AS CANADIAN AND AUSTRALIAN WHEAT
THAT IS SOLD IN INTERNATIONAL TRADE?

National Results



State-By-State Results



Area polled represents 80% of the entire nation's wheat production.
Totals may not equal 100% due to rounding.

ENHANCING THE QUALITY OF
U.S. GRAIN
FOR INTERNATIONAL TRADE

SUMMARY



CONGRESS OF THE UNITED STATES OFFICE OF TECHNOLOGY ASSESSMENT

the transaction). Factors and limits in factors in the grade standards are relatively stable across crop years (i.e., the definition of No. 2 corn does not change from year to year). Similarly, the definition of No. 2 Hard Red Winter wheat does not change, although intrinsic differences not measured in the standards may change. This is not necessarily the case in other countries. Major changes to the U.S. system cannot be implemented in less than a year after they are promulgated. Some other exporters adjust factor limits with each crop year.

Market-Determined Premiums and Discounts

Premiums and discounts and/or regulations in all countries are used to provide quality incentives to market participants. Those established in the United States are via the interaction of supply and demand for measurable quality characteristics, i.e., the market for quality characteristics. Consequently, U.S. values perhaps reflect true values better than do premiums and discounts administered in several other exporting countries. A notable exception is France. Efficient determination of price differentials is important because they essentially allocate grain across end-users and provide signals throughout the production and marketing system. Through these differentials the system responds to market needs.

Competitors' Policies

The institutions, policies, and trading practices in the marketing system of the major grain exporting countries differ considerably. The extent of market intervention varies from highly regulated throughout (e.g., Australia and Canada), to partial, or no regulation. Differences exist in procedures for seed variety development and release, the use of variety identification in the marketing system, and the use of grain receival standards (table 1-1). In addition, a number of other countries address grain quality problems as part of an integrated agricultural policy. Major foreign wheat exporters have more extensive controls at first point of sale than U.S. exporters. Wheat from other

countries is probably preferred over comparably priced U.S. wheats due to these mechanisms.

The policy and institutional structure of the U.S. grain system provides the framework for various grain-handling practices. Technologies for producing and handling grain are quite similar among competing countries. The main difference is that the United States is slightly more efficient in using these technologies. But points in the marketing channel at which they are used differ.

A case in point is cleaning. Outside the United States, most exporters clean grain at the first point of receipt. Canada and Australia are two exceptions, although for different reasons. Canada, however, is studying the economic feasibility of cleaning grain in the country versus at export and will probably change. Australian farmers deliver grain that does not need to be cleaned, unlike the situation in the United States. Basically, no economic incentive exists to clean grain at the first point of receipt in the United States.

The other major handling practice in which the United States differs from other exporters is blending. Blending U.S. grain over wide ranges of quality to create a uniform product for sale is necessitated by the lack of any minimum receival standard. Blending exists outside the United States but not to the same extent. In other countries it is done over very narrow ranges in quality. These exporters basically have grain of uniform quality moving throughout the system. The U.S. system lacks uniformity in quality throughout the market channel. At export, grain is blended in an attempt to produce a uniform quality that meets buyers' specifications. The OTA survey of foreign and domestic buyers of U.S. grain clearly indicated that lack of uniformity between shipments is the buyers' biggest complaint.

Problem Areas

Genetics and Variety Release

Genetically, yield and important intrinsic quality characteristics are often inversely re-

SUMMARY
MARKETING YEARS 1983-84, 1984-85, 1985-86, 1986-87, 1987-88, 1988-89
WHEAT CARGO QUALITY ANALYSIS - ARRIVALS IN JAPAN

FACTOR	AVERAGE	YEAR	PROTEIN WHEATS							SOFT WHEATS		DURUM	
			(D)NS 14%	(C)NRS 13.5%	APH 14%	APH 13%	HRW 13%	HRW 11.5%	(C)RD	WH	ASN	HRD	2CHRD
CARGOS (TOTAL)													
		83-4	48	76	6	11	35	25	14	61	40	N/A	N/A
		84-5	47	71		17	36	24	11	56	37	N/A	N/A
		85-6	48	62		18	30	25	10	50	36	N/A	N/A
		86-7	54	65	1	13	30	23	10	52	33	N/A	N/A
		87-8	50	64	1	13	34	24	9	56	31	N/A	N/A
		88-9	44	60		14	30	24	12	41	35	N/A	N/A
		AVG	49	66	3	14	33	24	11	53	35	N/A	N/A
TEST WEIGHT													
		83-4	62.29	62.21	65.17	64.13	62.82	63.34	63.17	61.78	62.27	61.98	62.29
		84-5	61.90	61.91		63.08	62.47	63.13	63.56	61.88	61.79	61.90	61.74
		85-6	61.56	61.67		63.62	61.77	62.87	62.42	61.33	62.75	61.67	60.97
		86-7	62.44	62.02	62.76	63.63	62.24	62.80	62.89	61.72	63.82	62.22	62.68
		87-8	62.59	62.57	62.14	63.29	62.84	62.71	63.18	61.93	64.41	62.22	62.53
		88-9	62.25	62.11		63.70	61.47	61.82	62.11	62.40	63.52	61.59	62.29
		AVG	62.18	62.08	64.49	63.54	62.30	62.78	62.89	61.82	63.03	61.93	62.08
DOCKAGE %													
		83-4	0.94	0.14	0.38	0.31	0.62	0.65	0.65	0.76	0.36	1.30	0.30
		84-5	0.94	0.15		0.32	0.69	0.68	0.62	0.83	0.39	1.00	0.30
		85-6	0.79	0.15		0.34	0.63	0.59	0.66	0.79	0.36	0.80	0.30
		86-7	0.79	0.12	0.40	0.28	0.62	0.60	0.54	0.74	0.30	0.90	0.20
		87-8	0.77	0.15	0.42	0.40	0.53	0.60	0.69	0.68	0.30	1.30	0.20
		88-9	0.85	0.16		0.44	0.60	0.65	0.63	0.71	0.32	1.00	3.00
		AVG	0.84	0.14	0.39	0.35	0.62	0.63	0.63	0.75	0.34	1.05	0.72
FOREIGN MAT %													
		83-4	0.42	0.22	0.10	0.04	0.35	0.41	0.54	0.37	0.11	0.00	0.80
		84-5	0.41	0.22		0.08	0.40	0.45	0.51	0.39	0.15	0.40	1.00
		85-6	0.38	0.16		0.09	0.47	0.40	0.35	0.32	0.17	0.00	0.30
		86-7	0.33	0.14	0.10	0.05	0.41	0.40	0.27	0.33	0.13	0.10	0.00
		87-8	0.28	0.16	0.10	0.05	0.24	0.25	0.39	0.28	0.13		0.10
		88-9	0.30	0.20		0.09	0.17	0.24	0.28	0.31	0.09	0.10	
		AVG	0.35	0.18	0.10	0.07	0.34	0.36	0.40	0.34	0.13	0.12	0.44
DAMAGED KER %													
		83-4	0.46	0.33	0.22	0.21	0.33	0.41	0.28	0.56	0.23	0.30	0.40
		84-5	0.42	0.27		0.36	0.33	0.31	0.29	0.54	0.16	1.00	0.50
		85-6	0.44	0.31		0.40	0.32	0.41	0.34	0.57	0.26	0.70	0.40
		86-7	0.51	0.35	0.20	0.37	0.53	0.47	0.22	0.71	0.21	0.60	0.60
		87-8	0.92	0.71	0.70	0.62	0.84	1.12	0.60	1.14	0.43	1.80	2.30
		88-9	0.90	0.51		0.39	1.20	1.10	0.96	0.98	0.45	1.90	4.00
		AVG	0.61	0.41	0.28	0.39	0.58	0.63	0.45	0.74	0.29	1.05	1.37
SHRINK & BROK %													
		83-4	1.58	1.18	0.60	0.85	1.84	1.64	1.69	0.94	0.90	1.70	1.00
		84-5	1.74	1.54		1.16	1.65	1.67	1.48	1.05	0.91	1.90	1.00
		85-6	1.67	1.40		0.93	2.10	1.91	1.70	1.34	0.83	1.50	1.10
		86-7	1.30	0.87	1.00	0.81	1.87	1.83	1.69	1.37	0.83	1.20	0.70
		87-8	1.06	0.68	1.20	0.87	1.39	1.45	1.60	0.99	0.63	1.00	0.90
		88-9	1.20	0.72		0.97	1.96	2.02	1.92	1.15	0.67	1.00	1.00
		AVG	1.42	1.08	0.73	0.94	1.79	1.75	1.69	1.13	0.80	1.38	0.95
MOISTURE %													
		83-4	11.65	12.03	10.46	10.97	10.98	11.07	11.15	10.77	10.15	11.36	11.82
		84-5	11.37	11.71		10.89	11.16	11.10	11.03	10.43	10.38	11.72	11.24
		85-6	11.83	12.55		10.83	11.14	10.91	11.25	10.25	10.29	11.95	11.29
		86-7	11.66	13.06	11.65	10.90	11.30	11.29	11.46	10.25	9.97	12.25	11.48
		87-8	11.70	12.62	10.73	11.29	11.26	11.28	10.92	10.38	9.92	11.80	11.85
		88-9	11.47	12.62		10.85	11.01	11.04	11.00	9.95	10.25	11.87	11.89
		AVG	11.62	12.41	10.64	10.94	11.14	11.11	11.13	10.37	10.17	11.83	11.60

(D)NS - DARK NORTHERN SPRING WH - WESTERN WHITE
 (C)NRS - CANADIAN WESTERN RED SPRING ASN - AUSTRALIAN STANDARD WHITE
 APH - AUSTRALIAN PRIME HARD HRD - HARD AMBER DURUM (ONLY ANNUAL DATA AVAILABLE)
 HRW - HARD RED WINTER 2CHRD - #2 CANADIAN WESTERN AMBER DURUM (ONLY ANNUAL DATA AVAILABLE)

**** SEE REVERSE SIDE FOR ADDITIONAL DATA ****

Source: Japan Wheat Flour Institute

Page 1

SUMMARY (Cont.)
MARKETING YEARS 1983-84, 1984-85, 1985-86, 1986-87, 1987-88, 1988-89
WHEAT CHARG QUALITY ANALYSIS - ARRIVALS IN JAPAN

FACTOR	YEAR	PROTEIN WHEATS								SOFT WHEATS		DURUM	
		(D)NS	10NRS	APR	APR	HRW	HRW	HRW	(HRD)	MM	ASM	HRD	20HRD
AVERAGE		148	113.58	148	130	130	11.54						
PROT % (WHEAT)	83-4	113.91	144.01	146.60	113.49	112.95	111.71	110.12		9.56	10.27	114.42	113.30
	84-5	114.01	144.13		113.45	112.98	111.84	110.23		9.41	9.93	114.13	113.85
	85-6	114.00	144.11		113.31	113.06	111.79	110.77		10.64	9.98	114.50	114.63
	86-7	113.81	143.83	144.55	113.55	112.95	111.73	110.79		10.68	10.34	113.97	113.31
	87-8	113.96	144.00	144.47	113.61	112.97	111.67	110.51		110.48		9.77	114.18
	88-9	114.20	144.20		113.58	113.11	112.00	111.10		110.63	9.72	114.67	114.18
	AVG	113.97	144.04	144.58	113.49	113.00	111.79	110.57		10.19	10.01	114.31	113.78
FALLING NUMBER	83-4	400	382	594	458	424	398	346		296	385	N/A	N/A
	84-5	399	386		472	439	402	375		321	370	N/A	N/A
	85-6	359	364		479	430	417	403		333	368	N/A	N/A
	86-7	339	356	442	508	406	406	394		332	402	N/A	N/A
	87-8	334	354	581	484	369	363	343		322	368	N/A	N/A
	88-9	337	345		456	392	376	367		323	342	N/A	N/A
	AVG	361	366	573	476	410	394	370		320	373	N/A	N/A
1000 KER WEIGHT	83-4	32.43	29.53	37.13	33.88	30.41	31.93	32.58		40.25	33.43	N/A	N/A
	84-5	31.82	28.13		33.27	29.44	31.29	33.50		39.83	33.66	N/A	N/A
	85-6	31.76	28.57		34.29	27.86	29.86	30.55		36.17	34.88	N/A	N/A
	86-7	33.58	30.80	33.90	35.73	28.99	29.76	30.61		35.62	35.57	N/A	N/A
	87-8	35.29	31.60	32.40	34.35	30.90	31.28	32.47		34.11	37.25	N/A	N/A
	88-9	33.06	31.01		33.35	27.13	28.30	29.78		36.49	36.74	N/A	N/A
	AVG	33.02	29.89	36.14	34.11	29.20	30.41	31.60		37.90	35.15	N/A	N/A
FLOUR YIELD %	83-4	72.27	71.19	73.60	74.05	72.98	72.79	71.87		71.57	70.23	N/A	N/A
	84-5	71.93	69.90		72.87	71.69	71.90	71.98		71.39	68.94	N/A	N/A
	85-6	71.52	69.80		72.53	70.74	70.94	71.53		70.29	68.16	N/A	N/A
	86-7	72.17	72.08	74.30	73.45	71.20	71.80	70.88		70.80	69.47	N/A	N/A
	87-8	70.88	69.96	72.10	70.60	70.98	70.24	70.17		70.18	67.68	N/A	N/A
	88-9	71.26	69.85		72.38	70.79	70.61	71.47		69.72	69.01	N/A	N/A
	AVG	71.68	70.49	73.50	72.61	71.44	71.38	71.38		70.72	68.96	N/A	N/A
FLOUR ASH %	83-4	0.47	0.46	0.44	0.45	0.44	0.44	0.43		0.42	0.45	N/A	N/A
	84-5	0.46	0.46		0.45	0.43	0.42	0.43		0.41	0.44	N/A	N/A
	85-6	0.45	0.42		0.43	0.43	0.42	0.44		0.42	0.42	N/A	N/A
	86-7	0.42	0.42	0.44	0.43	0.42	0.41	0.41		0.41	0.42	N/A	N/A
	87-8	0.42	0.43	0.48	0.43	0.40	0.41	0.41		0.40	0.41	N/A	N/A
	88-9	0.44	0.43		0.45	0.43	0.43	0.43		0.42	0.42	N/A	N/A
	AVG	0.44	0.44	0.45	0.44	0.43	0.42	0.43		0.41	0.43	N/A	N/A
PROT % (FLOUR)	83-4	12.62	13.06	13.28	12.32	11.57	10.41	8.93		7.91	8.90	N/A	N/A
	84-5	12.60	11.99		12.17	11.66	10.55	9.07		7.74	8.64	N/A	N/A
	85-6	12.71	13.09		12.04	11.65	10.43	9.47		8.79	8.68	N/A	N/A
	86-7	12.33	12.83	13.00	12.13	11.41	10.32	9.38		8.70	8.96	N/A	N/A
	87-8	12.57	12.99	13.10	12.12	11.44	10.23	9.19		8.55	8.34	N/A	N/A
	88-9	12.80	13.28		12.04	11.58	10.56	9.88		8.91	8.45	N/A	N/A
	AVG	12.60	13.04	13.22	12.13	11.55	10.42	9.31		8.39	8.67	N/A	N/A
AMYLOGRAM	83-4	523	580	639	598	560	487	403		268	651	N/A	N/A
	84-5	535	540		515	620	509	416		363	577	N/A	N/A
	85-6	432	539		632	575	517	502		443	632	N/A	N/A
	86-7	344	510	625	597	464	501	480		388	664	N/A	N/A
	87-8	342	434	725	691	423	379	364		354	641	N/A	N/A
	88-9	346	490		690	534	477	434		423	609	N/A	N/A
	AVG	419	518	648	618	531	479	432		368	628	N/A	N/A

(D)NS - DARK NORTHERN SPRING MM - WESTERN WHITE
 10NRS - CANADIAN WESTERN RED SPRING ASM - AUSTRALIAN STANDARD WHITE
 APR - AUSTRALIAN PRIME HARD HRD - HARD AMBER DURUM (ONLY ANNUAL DATA AVAILABLE)
 HRW - HARD RED WINTER 20HRD - 62 CANADIAN WESTERN AMBER DURUM (ONLY ANNUAL DATA AVAILABLE)

Source: Japan Wheat Flour Institute

WHEAT DISCOUNT SCHEDULE #1
EFFECTIVE 3/1/88
SUBJECT TO CHANGE WITHOUT NOTICE

<u>TEST WEIGHT</u>	<u>PER BUSHEL</u>	<u>MOISTURE</u>	<u>PER BUSHEL</u>
59.9 - 59.0	½ ¢	13.5 - 13.7	1 ¢
58.9 - 58.0	1 ¢	13.8 - 14.0	2 ¢
57.9 - 57.0	2 ¢		
56.9 - 56.0	3 ¢		
55.9 - 55.0	4 ¢		

Above 14.0 consult with merchandiser.

Under 55 lbs. subject to rejection
or discount on merit.
Consult with merchandiser.

<u>FOREIGN MATERIAL</u>	<u>PER BUSHEL</u>	<u>TOTAL DAMAGE</u>	<u>PER BUSHEL</u>
0.6 - 1.0	1 ¢	2.1 - 3.0	1 ¢
1.1 - 1.5	2 ¢	3.1 - 4.0	2 ¢
1.6 - 2.0	3 ¢	4.1 - 5.0	3 ¢
2.1 - 2.5	4 ¢		
2.6 - 3.0	5 ¢		

Above 5.0 subject to refusal, or discount
Consult with merchandiser.

Above 3.0 consult with merchandiser.

<u>SHRUNKEN & BROKEN</u>	<u>PER BUSHEL</u>	<u>TOTAL DEFECTS</u>	<u>PER BUSHEL</u>
3.1 - 5.0	½ ¢	3.1 - 5.0	½ ¢
5.1 - 8.0	2 ¢	5.1 - 8.0	2 ¢
8.1 - 12.0	4 ¢	8.1 - 12.0	4 ¢
12.1 - 20.0	6 ¢	12.1 - 20.0	6 ¢

Above 20.0 consult with merchandiser.

<u>OTHER FACTORS</u>	<u>PER BUSHEL</u>
INFESTED	5 ¢
MUSTY	3 ¢
SOUR	5 ¢
LIGHT SMUTTY	10 ¢
SMUTTY	25 ¢
COFO	10 ¢
Stones subject to refusal. Consult with merchandiser.	

IDK wheat - subject to rejection if
over 31 kernels per 100 grams.

Sample grade will be subject to
rejection or discount at our discretion.

Heat Damage subject to rejection or
discount at our discretion.

Stones subject to rejection or
discount at our discretion.

Infested subject to rejection or
discount at our discretion.

Nebraska Wheat Board

P.O. Box 94912

Lincoln, Nebraska 68509-4912

(402) 471-2358



Exhibit K

NEWS RELEASE

Contact: Erv Friehe
308-345-5635

FOR IMMEDIATE RELEASE

WHEAT BOARD CHAIRMAN CALLS FOR FEDERAL ACTION FOLLOWING SOVIET OFFICIALS CRITICISM OF U.S. WHEAT

McCook, NE -- "The Deputy Chairman of the Soviet Union's grain import agency did Nebraska farmers a big favor this week with his straight talk on U.S. grain quality problems," said Erv Friehe, Chairman of the Nebraska Wheat Board.

Deputy Chairman of EXPORTKHLB, Michael Ageev, told a Senate hearing in Washington, D.C. on February 8 that the Soviet Union will import less grain in coming years. He testified that the reduction in Soviet imports will come at the expense of U.S. grain if U.S. quality problems aren't corrected.

Friehe has investigated U.S. grain quality problems in the Soviet Union as part of an official U.S. government inspection team. He has been promoting measures to correct inadequacies in U.S. grain standards and export practices since witnessing serious quality problems with U.S. grain in the Soviet port of Odessa on December 5, 1985.

"The United States has done little to improve its wheat quality and has taken minimal measures to create competitive grain standards and grading practices," said Friehe. "It's no wonder that Deputy Chairman Ageev spoke with such candor on the quality issue at the Senate hearing yesterday." Mr. Ageev represented the Soviet Union on a panel of foreign buyers that presented their views on U.S. grain quality to the Subcommittee on Agricultural Research and General Legislation. The hearing, which focused on enhancing grain quality, is part of preparation for the 1990 farm bill.

"The Soviet Union is the largest international customer Nebraska farmers have for Hard Red Winter wheat and when your largest client tells you to become competitive or lose their business, it's time to take serious action," said Friehe. He warned, "This issue of cleaning up U.S. wheat has been talked to death throughout the grain industry for years. It's time for federal action, and Senator Daschle's Grain Quality Incentives Act is the vehicle to get the job done."

-END-

Nebraskan: Soviet Right to Fault U.S. Grain

By Ann Toner

Omaha World-Herald Farm Writer

A Soviet agricultural official did farmers a favor by complaining at a Feb. 8 U.S. Senate hearing about the quality of U.S. export grain, said Erv Friebe of McCook, chairman of the Nebraska Wheat Board.

Friebe and the Nebraska Wheat Board have long favored tougher U.S. grain standards and export requirements. Friebe was part of a U.S. government inspection team that investigated problems with U.S. grain quality in the Soviet Union in 1989.

The Soviet official testified at the hearing, Michael Agnew, deputy chairman of ExportBelt, and his country would import less U.S. grain unless quality problems are corrected.

Agnew told the Senate subcommittee on agriculture and general legislation: "Huge sums in free currency are spent on the imports of grain. . . . Our government and the general public pay great attention to the quality of grain that we import and . . . we are criticized when the grain we import does not meet the requirements of our customers."

Some years, up to half the grain

imported by the Soviet Union comes from the United States, Agnew said. U.S. wheat shipments of No. 2 hard red winter wheat have a higher content of foreign material, he said, than in the last three years of 1.7 percent, compared with seven-tenths of 1 percent for Canadian western red spring wheat and five-tenths of 1 percent in Australian standard white wheat, he said.

The U.S. wheat is dirty and contains too many broken and damaged kernels and weed seeds, although insect infestation problems have decreased, Agnew said. U.S. wheat is also "a large number of small kernels, which lowers the flour yield."

Agnew said the Soviets also have complaints about the No. 3 yellow corn it imports. Foreign matter averaged 3.5 percent and varied among shipments between seven-tenths of 1 percent and 10.6 percent. By contrast, Chinese corn averaged nine-tenths of 1 percent.

But the biggest complaint, he said, is the percentage of broken kernels, varying from 1 percent to 35 percent, which causes the grain to go out of condition and limits its uses.

U.S. grain sorghum is also poor in quality, Agnew said. Foreign matter

averages 3.9 percent, compared with 1 percent for Argentine sorghum and one-tenth of 1 percent for Australian sorghum. The percentage of broken kernels in U.S. sorghum averaged 9.6 percent, compared with 5.3 percent for Argentine and 4.8 for Australian sorghum, he said.

Soybean meal imported from the United States has been mostly acceptable, Agnew said.

Shipments of weevil-infested grain have been greatly reduced since the practice of fumigation en route with phosphine was initiated in 1985, he said. However, weevils, longhorn beetles and grain insects have complained about the health hazards associated with fumigation, Agnew said, and one shipping company will no longer permit the practice.

Since Australia, Canada and Europe can manage to ship grain for export without need of fumigation, the Soviet Union would like to see the United States take similar steps.

Agnew suggested four steps needed for the U.S. to clean up its grain export.

— Better cleaning of grain when it is received from farmers at country elevators, with additional cleaning at ter-

ritorial elevators if needed
— Multistage drying of corn to reduce breakage
— Fumigation of grain throughout its time in storage
— Elimination of foreign seeds in grain shipments.

Friebe said of Agnew's comments, "The United States has done little to improve its wheat quality and has taken minimal measures to create competitive grain standards and grading practices. It's no wonder that Deputy Chairman Agnew spoke with such candor on the quality issue."

Friebe said the Soviet Union is Nebraska farmers' largest customer for hard red winter wheat.

TABLES CONCERNING THE EXAMINATION OF WHEAT CARGO SAMPLES

COLLECTED IN EUROPE, NOVEMBER 1, 1959 - JANUARY 1, 1961

Project sponsored jointly by:

Great Plains Wheat, Inc.,
Garden City, Kansas, U.S.A.
and
Foreign Agricultural Service,
U.S. Department of Agriculture,
Washington, D.C., U.S.A.

Compiled by: Institute for Cereals, Flour and Bread T.B.O., Wageningen, the Netherlands.

TABLE VII.-UNITED STATES - U.S. grades and grading factors relating to United States wheat cargo samples at time of loading (grade ordered) and when overseas sample received at Chicago (regrade) - CONTINUED -

TABLE VII.-UNITED STATES - U.S. grades and grading factors relating to United States wheat cargo samples at time of loading (grade ordered) and when overseas sample received at Chicago (regrade) - CONTINUED -																						
Grade analysis - when loaded											Grade analysis - overseas sample											
Code No.	Grade ordered ¹⁾	Test weight, lbs.	Foreign material, %	Dockage, %	Shrunken and broken kernels, %	Total damage, %	Wheat of other classes, %	Dockage + foreign material, %	Total cleanout, %	Moisture, %	Loading port	Regrade ¹⁾	Test weight, lbs.	Foreign material, %	Dockage, %	Shrunken and broken kernels, %	Total damage, %	Wheat of other classes, %	Live weevils ²⁾	Dockage + foreign material, %	Total cleanout, %	
B 10	3 MS	59.5	1.5	-	-	-	-	1.5	1.5	12.7	Houston	3 MS	60.2	1.2	.8	3.4	1.0	1.5	-	Mo	2.0	5.4
B 84	3 MS	60.0	1.4	-	-	-	-	1.4	1.4	12.1	Duluth	3 MS	60.3	1.3	1.0	5.0	3.5	-	Mo	2.3	7.3	
B 88	3 MS	-	-	-	-	-	-	-	-	-	Prescott	3 MS 2 1/2 dkg	58.0	1.4	2.8	3.0	1.2	-	Mo	4.2	7.2	
B 105	3 MS	-	-	-	-	-	-	-	-	-	Duluth	2 MS	60.0	.8	.7	2.0	-	-	Mo	2.1	4.1	
B 113	3 MS	-	-	-	-	-	-	-	-	-	Duluth/Superior	2 MS 4	60.0	.8	.9	1.9	-	-	Mo	1.7	3.6	
B 120	3 MS	59.3	1.4	1.4	-	-	-	2.8	2.8	12.4	Duluth/Superior	3 MS	59.6	1.2	1.6	2.3	.9	-	Mo	2.8	5.1	
B 131	3 MS	59.0	1.7	.8	-	-	-	2.5	2.5	-	Duluth	3 MS	59.2	1.9	1.7	1.4	.5	-	Mo	3.6	5.1	
B 132	3 MS	60.0	1.6	-	-	-	-	1.6	1.6	-	Duluth	2 MS 4	59.3	.9	.9	2.1	.4	-	Mo	1.8	3.9	
average		59.6	1.5	.4	-	-	-	2.0	2.0	12.4			59.6	1.3	1.3	2.6	.9	.2	-	-	2.6	5.2
A 52	1 MS	-	-	-	-	-	-	-	-	-	Duluth/Superior	1 MS	59.8	.3	.4	1.7	2.0	-	Mo	.7	2.4	
B 141	1 MS	-	-	-	-	-	-	-	-	-	Montreal	1 MS 1 1/2 dkg	59.0	.4	1.3	2.6	.6	-	Mo	1.7	4.3	
average		-	-	-	-	-	-	-	-	-			59.4	.4	.9	2.2	1.3	-	-	-	1.2	3.4
B 125	2 MS	57.6	.8	-	-	-	-	.8	.8	13.0	Duluth/Superior	2 MS	57.6	1.0	.7	1.2	1.0	-	Mo	1.7	2.9	
B 20	3 MS 1 1/2 dkg	57.5	1.4	-	-	-	-	1.4	1.4	11.9	Superior	3 MS 1 1/2 dkg	57.6	1.2	1.3	2.2	-	6.2	Mo	2.5	4.7	
B 61	3 MS	-	-	-	-	-	-	-	-	-	Duluth/Superior	3 MS 3/4 dkg	59.7	1.4	3.8	2.0	.7	.5	Mo	5.2	1.2	
B 64	3 MS	61.0	2.0	-	-	-	-	2.0	2.0	11.6	Duluth	3 MS	61.2	1.2	.9	5.0	-	-	Mo	2.1	7.1	
B 65	3 MS	-	-	-	-	-	-	-	-	-	Montreal	3 MS	59.5	1.6	.7	4.0	-	-	Mo	2.3	6.3	
A 94	3 MS	-	-	-	-	-	-	-	-	-	Montreal	3 MS 1 1/2 dkg	59.5	1.5	1.0	3.2	.7	-	Mo	2.5	5.7	
B 111	3 MS	56.8	.6	-	-	-	-	.6	.6	12.5	Superior	3 MS	57.0	1.7	.9	2.1	-	5.0	Mo	2.5	4.6	
B 124	3 MS	58.0	1.7	.8	-	-	-	2.5	2.5	12.3	Duluth	3 MS	58.1	1.5	.8	2.6	1.4	-	Mo	2.3	4.9	
average		58.3	1.4	.2	-	-	1.5	1.6	1.6	12.1			58.9	1.4	1.3	3.0	.4	1.7	-	-	2.8	5.8

TABLE VII - UNITED STATES - U.S. grade and grading factors relating to United States wheat cargo samples at time of loading (grade ordered) and when overseas sample received at Chicago (regrade) - CONTINUED -

Grade analysis - when loaded											Grade analysis - overseas sample												
Code No.	Grade ordered ¹⁾	Test weight, lbs.	Foreign material, %	Dockage, %	Shrunken and broken kernels, %	Total damage, %	Wheat of other classes, %	Dockage + Foreign material, %	Total cleanout, %	Moisture, %	Loading port	Regrade ¹⁾	Test weight, lbs.	Foreign material, %	Dockage, %	Shrunken and broken kernels, %	Total damage, %	Wheat of other classes, %	Live weevil ²⁾	Dockage ³⁾	Foreign material, %	Total cleanout, %	
B 8	1 DW	61.4	.5	-	-	1.0	-	.5	.5	11.7	Galveston	1 DW	62.5	.3	.6	2.7	.3	-	-	Mo	.6	3.6	
B 9	1 DW	62.0	.3	-	-	2.0	-	.3	.3	10.7	Galveston	1 DW	62.4	.4	.7	3.1	1.8	-	-	Mo	1.1	4.2	
B 10	1 DW	61.8	.4	-	-	.9	-	.4	.4	11.2	Galveston	1 DW	62.8	.4	.3	2.1	1.7	-	-	Mo	.7	2.8	
B 11	1 DW	61.6	.4	-	-	1.5	-	.4	.4	11.0	Galveston	1 DW	62.4	.3	.6	3.1	1.3	-	-	Mo	.9	4.0	
B 45	1 DW	62.0	.2	-	-	.9	-	.5	.5	11.2	Galveston/Houston	1 DW 1% dkg	63.3	.4	1.2	3.5	.9	-	-	Mo	1.6	5.1	
B 112	1 DW	62.3	.4	-	-	1.0	-	.4	.4	11.3	Galveston	1 DW	62.7	.2	.3	1.1	2.0	-	-	Mo	.5	1.6	
B 117	1 DW	61.6	.2	.5	-	-	-	.7	.7	11.2	Galveston	1 DW	62.2	.2	.5	2.5	-	-	-	Mo	1.0	3.5	
B 142	1 DW	62.7	.4	-	.5	-	-	.4	.4	11.5	Corpus Christi	1 DW	63.0	.3	.6	2.2	.1	-	-	Mo	.9	3.1	
average		61.7	.3	.8	.5	.7	-	.4	.5	11.4			62.1	.4	.6	2.9	.7	-	-	-	1.0	3.8	
L 10	2 DW	60.7	.7	-	-	1.5	-	.7	.7	11.5	Galveston	1 DW	61.0	.5	.8	3.8	1.2	2.0	-	-	-	1.3	5.1
L 20	2 DW	60.7	.6	-	-	1.0	-	.6	.6	10.9	Galveston	1 DW	61.2	.5	.5	2.9	-	-	-	-	-	1.0	3.9
L 26	2 DW	60.6	.6	-	-	.9	-	.6	.6	11.7	Port Arthur	1 DW	60.5	.4	.9	3.2	.8	-	-	-	-	1.3	4.9
L 38	2 DW	60.7	.8	-	-	2.0	-	.6	.8	11.4	Galveston	1 DW	61.8	.4	.9	3.0	-	-	-	-	-	1.3	4.3
L 54	2 DW	60.8	.6	-	-	1.0	-	.6	.6	11.2	Galveston	2 DW 1% dkg	61.2	1.0	1.2	4.4	1.3	-	-	Mo	2.2	4.6	
L 55	2 DW	61.4	.9	-	-	1.6	-	.9	.9	11.4	Galveston	2 DW	61.6	.5	.5	3.2	2.5	-	-	Mo	1.0	4.2	
L 61	2 DW	62.0	.7	.6	-	-	-	1.3	1.3	11.3	Port Arthur	1 DW 1% dkg	62.5	.3	1.1	2.5	.8	-	-	Mo	1.4	3.9	
L 64	2 DW	61.6	.7	-	-	1.0	-	.7	.7	11.4	Galveston	2 DW	61.4	.7	1.6	3.0	2.0	-	-	Mo	1.3	5.1	
L 71	2 DW	61.8	.7	-	-	2.0	-	.7	.7	11.4	Galveston	2 DW	62.3	.5	.8	2.8	1.6	-	-	Mo	1.3	4.1	
L 78	2 DW	62.2	.7	-	-	-	-	.7	.7	10.8	Port Arthur	2 DW	62.4	.6	1.4	3.1	1.2	-	-	Mo	2.2	5.3	
L 79	2 DW	62.0	.7	-	-	-	-	.7	.7	11.0	Port Arthur	2 DW	61.9	.7	.9	3.0	1.0	-	-	-	1.6	5.5	
L 85	2 DW	62.3	.7	-	-	-	-	.7	.7	10.7	Port Arthur	1 DW	62.6	.5	.6	3.1	1.0	-	-	Mo	1.1	4.1	
L 141	2 DW	62.5	.6	-	-	-	-	.6	.6	11.3	Corpus Christi	2 DW	62.3	.6	.7	2.6	1.0	-	-	Mo	1.5	4.1	
average		61.5	.7	.5	.5	.8	-	.7	.7	11.2			61.7	.6	.9	3.2	1.1	.2	-	-	1.5	4.7	

TABLE VIII (a) - CANADA - U.S. grades and grading factors relating to Canadian wheat cargo samples collected at European ports, 1959-60.

Code No.	Contract grade or description	U.S. grade ¹⁾	Test weight, lbs.	Foreign material, %	Dockage, %	Shrunken and broken kernels, %	Total damage, %	Wheat of other classes, %	Live weevils ²⁾	Dockage + foreign material, %	Total cleanout, %	Landing port
A 26	1 Hor. Manitoba	1 Hvy INS	63.6	.2	.2	.2	Tr	-	No	.4	.6	Vancouver
A 47	1 Hor. Manitoba	1 Hvy INS	63.0	.1	.1	1.0	-	-	No	.2	1.2	Montreal
A 59	1 Hor. Manitoba	1 Hvy INS	63.3	.2	.1	1.0	-	-	No	.3	1.3	Montreal
A 80	1 Hor. Manitoba	1 Hvy INS	62.7	.2	.1	1.4	Tr	-	No	.3	1.7	Port Churchill
A 88	1 Hor. Manitoba	1 Hvy INS	62.2	.3	.3	1.4	.4	-	No	.6	2.0	Port Churchill
average			63.0	.2	.2	1.0	3)	-	-	.4	1.4	
A 10	2 Hor. Manitoba	1 Hvy INS	62.0	.2	.1	1.4	1.5	-	No	.3	1.7	Montreal
A 14	2 Hor. Manitoba	1 Hvy INS	61.8	.3	.2	1.6	-	-	No	.5	2.1	Vancouver
A 18	2 Hor. Manitoba	1 Hvy INS	60.4	.2	.1	1.2	Tr	-	No	.4	1.6	Quebec
A 22	2 Hor. Manitoba	1 Hvy INS	62.7	.7	.1	1.2	Tr	-	No	.8	2.0	Vancouver
A 25	2 Hor. Manitoba	1 Hvy INS	61.6	.4	.2	1.3	1.3	.3	1	.6	1.9	West St. John
A 31	2 Hor. Manitoba	1 Hvy INS	59.3	Tr	.1	1.7	Tr	-	No	.1	1.8	Victoria
A 33	2 Hor. Manitoba	1 Hvy INS	61.7	.2	.2	1.5	-	-	No	.4	1.9	Elkford
A 36	2 Hor. Manitoba	1 Hvy INS	62.0	.4	.1	1.0	-	-	No	.5	1.5	West St. John
A 43	2 Hor. Manitoba	1 Hvy INS	61.0	.2	.1	1.0	-	-	No	.3	1.3	Vancouver
A 45	2 Hor. Manitoba	1 Hvy INS	61.8	.1	.1	1.0	-	-	No	.2	1.2	Three Rivers
A 48	2 Hor. Manitoba	1 Hvy INS	61.8	.2	.1	1.0	2.0	-	No	.3	1.3	Three Rivers
A 51	2 Hor. Manitoba	1 Hvy INS	62.0	.3	.1	1.6	1.6	-	No	.4	2.0	Montreal
A 57	2 Hor. Manitoba	1 Hvy INS	60.2	.2	.1	2.7	1.3	-	No	.3	3.0	Montreal
L 5	2 Hor. Manitoba	1 Hvy INS	60.1	.5	.3	1.1	.4	.5	No	.8	2.9	Port Arthur
L 8	2 Hor. Manitoba	1 Hvy INS	62.5	.2	.1	1.6	-	-	No	.3	1.9	Vancouver
L 15	2 Hor. Manitoba	1 Hvy INS	61.1	.1	.2	1.1	Tr	-	No	.3	1.4	Montreal

1) For abbreviations used see footnote table I.

2) In some cases bran bugs (abbreviated b.b.) were found.

3) Less than 0.1 %

4) No data available.

5) White wheat 64 % hard red winter 26 % hard red spring 8 % soft red winter 2 %

6) White wheat 88 % soft red winter 12 % excelsior stones.

TABLE VIII (b) - FRANCE - U.S. Grades and Grading Factors relating to French wheat cargo samples collected at European ports, 1955-60.

Code No.	Contract grade or description	U.S. Grade ¹⁾	Test weight, lbs.	Foreign material, %	Dockage, %	Shrunken and broken kernels, %	Total damage, %	Wheat or other classes, %	Live weevils ²⁾	Dockage + Foreign material, %	Total cleanout, %	Loading port
# 4	French wheat	1 HW	59.0	.5	.1	.3	1.8	-	No	.8	1.1	St. Valéry - s/s
# 5	French wheat	1 HW	59.4	.1	.1	.3	2.0	-	No	.2	.5	Roupe
# 6	French wheat	1 HW lgt gr	59.6	.3	.4	.4	2.0	-	No	.7	1.1	Marais
# 9	French wheat	2 HW	59.6	.2	.2	.3	Tr	.5	No	.4	.7	Cazen
# 11	French wheat	2 HW	58.7	.2	.2	.3	Tr	Tr	No	.4	.4	Le Tréport
# 14	French wheat	2 HW	59.0	Tr	.2	.2	Tr	Tr	No	.2	.4	Le Tréport
L 2	French wheat	2 HW	60.0	.2	.2	.3	1.8	.4	No	1.4	.9	Bonfleur
L 14	French wheat	2 HW	59.4	.5	.9	.3	1.5	-	4	.2	1.9	Marais
L 21	French wheat	1 HW	59.4	.1	.1	.4	1.1	-	No	.2	.6	Rouen
L 24	French wheat	1 HW	60.4	.1	.2	.3	1.1	Tr	No	.3	.8	Bunkirk
L 25	French wheat	2 HW	60.3	.2	.2	.2	2.2	.5	No	.4	.6	St. Valéry - s/s
# 20	French wheat	2 HW	59.6	Tr	.2	.2	.9	.5	No	.5	.4	Rouen
# 23	French wheat	3 HW	60.1	.1	.2	.1	6.0	-	No	.3	.6	Le Tréport
# 25	French wheat	2 HW	59.7	.1	.4	.3	Tr	-	No	.6	.4	Bunkirk
# 26	French wheat	2 HW	58.1	.4	.4	.3	2.4	-	No	.8	1.3	Cazen
# 37	French wheat	3 HW	58.6	.5	.2	.3	3.3	-	No	.7	1.5	Cazen
# 41	French wheat	3 HW	57.6	.1	.1	.2	2.8	-	No	.1	.4	Rouen
	French wheat	3 HW	56.1	Tr	.1	.2	5.0	-	No	.1	.3	Bunkirk
average			59.4	.2	.2	.3	1.8	.3	-	.5	.8	

TABLE VIII (c) - U.S.S.R. - U.S. Grades and grading factors relating to Russian wheat
wheat cargo samples collected at European ports, 1959-60.
- CONCLUDED -

Code No.	Contract grade or description	U.S. grade 1)	Test weight, lbs.	Foreign material, %	Damage, %	Shrinkage and broken kernels, %	Total damage, %	Wheat of other classes, %	Live weevils, 2)	Damage to foreign material, %	Total cleanout, %	Loading port
R 83	Russian wheat no. 431	1 DSW	63.0	.4	.5	2.1	—	—	—	.9	3.0	Odesa
R 96	Russian wheat	1 DSW	62.5	.3	.2	1.3	—	—	Mo	.5	1.8	Odesa
R 98	Russian wheat	1 DSW	64.0	.1	.1	1.1	.6	—	Mo	.2	1.3	Odesa
R 102	Russian wheat	1 HW	61.0	.3	.3	1.2	1.5	—	Mo	.6	1.8	Nicolajev
R 103	Russian wheat	1 DSW	61.1	.2	.4	1.0	.3	—	Mo	.6	1.6	Novorossiisk
R 108	Russian wheat no. 431	1 DSW	62.0	.3	.3	1.1	.5	—	Mo	.6	1.7	Novorossiisk
R 111	Russian wheat no. 431	1 DSW	62.4	.2	.3	1.3	1.0	—	Mo	.5	1.8	Zhdanov/Novorossiisk
R 115	Russian wheat no. 431	3 HW	62.2	.5	.5	—	3.0	—	Mo	1.0	1.0	Nicolajev
R 121	Russian wheat	1 DSW	61.3	.4	.3	.5	—	—	Mo	.7	1.6	Novorossiisk
R 126	Russian wheat	1 DSW	61.7	.2	.5	.6	—	—	Mo	.7	1.3	Novorossiisk
R 130	Russian wheat no. 431	1 HW	62.0	Tr	.2	.7	1.0	—	Mo	.2	1.9	Novorossiisk
R 136	Russian wheat no. 431	1 DSW	62.5	.3	.3	.5	1.8	—	Mo	.6	1.5	Novorossiisk
R 137	Russian wheat no. 431	2 DSW	62.2	.4	.4	1.5	2.9	—	Mo	.8	2.1	Novorossiisk
R 139	Russian wheat no. 431	1 DSW	62.6	.3	.4	2.5	2.0	—	Mo	.7	3.2	Novorossiisk
R 140	Russian wheat no. 431	1 DSW	61.4	.3	.5	1.3	1.5	—	Mo	.8	2.1	Novorossiisk
R 144	Russian wheat no. 431	2 DSW	60.7	.6	.6	.9	.5	3)	Mo	1.2	2.1	Novorossiisk
average			62.9	.2	.3	1.2	.6		—	.5	1.7	Novorossiisk

TABLE VIII (d) - OTHER COUNTRIES - U.S. Grades and grading factors relating to wheat cargo samples collected at European ports, 1959-60.

Code No.	Contract grade or description	U.S. grade ¹⁾	Test weight, lbs.	Foreign material, %	Damage, %	Shrunken and broken kernels, %	Total damage, %	Wheat or other classes, %	Live weight ²⁾	Package + Foreign material, %	Total clearance, %	Loading port
SWEDEN												
H 15	Swedish wheat 77-78 kg/hl	2 HW	60.5	.9	.2	.7	Tr	-	No	1.1	1.8	Åhus
H 27	Swedish wheat 77-78 kg/hl	3 HW	59.0	.5	.2	.2	6.6	-	No	.7	.9	Norrköping
H 33	Swedish wheat 77-78 kg/hl	3 HW	59.0	.4	.2	.2	6.6	-	No	.6	.8	Pärstaden
H 36	Swedish wheat 77-78 kg/hl	5 HW	58.5	1.5	.2	.3	11.0	-	No	1.5	1.8	Norrköping
H 38	Swedish wheat 77-78 kg/hl	4 HW	59.4	.2	.2	.3	7.4	-	No	.4	.7	Stockholm
H 39	Swedish wheat 77-78 kg/hl	5 HW	59.2	.6	.2	.3	11.7	-	No	.8	1.1	Stockholm
average			59.3	.7	.2	.3	7.2	-	-	.9	1.2	
RUMANIA												
A 41	Rumanian wheat F.A.Q.	3 HW	62.2	2.0	.2	.5	.5	5.0	No	2.2	2.7	Constanza
A 64	Rumanian wheat F.A.Q.	3 HW	59.6	.6	.7	.7	4.6	-	No	1.5	2.0	Constanza
A 66	Rumanian wheat F.A.Q.	1 HW Yellow	61.0	.4	.2	.6	1.8	-	No	1.6	1.2	Constanza
L 32	Rumanian wheat F.A.Q.	3 HW wv	61.8	1.2	.5	.2	1.3	-	2(1b.b.)	1.5	1.7	Constanza
average			61.2	1.1	.4	.5	2.1	1.3	-	1.4	1.9	
AUSTRALIA												
L 4	Australian wheat	1 S EN	60.7	.2	.3	.5	1.0	-	No	.5	1.0	Geraldton
L 42	Australian wheat	2 S EN	59.8	.1	.4	.8	Tr	-	No	.5	1.3	Bunbury
L 64	Australian wheat	1 H EN	63.4	Tr	.4	1.1	Tr	-	No	.4	1.5	Sydney
average			61.5	.1	.4	.8	.3	-	-	.5	1.3	

Lincoln Star -- 2/6/90

Exhibit U

Kansas City Grain

KANSAS CITY, Mo. (AP) — Wheat 38 cars: unchanged to 2 lower; No. 2 hard 4.07; No. 3 3.94¼-4.13¼n; No. 2 red wheat 3.95¼-4.03¼n; No. 3 3.84¼-4.02¼n.

Corn 89 cars: 1¼ lower to unchanged; No. 2 white 2.95-3.05n; No. 2 yellow 2.28¼-2.34n; No. 3 2.03¼-2.33n.

No. 2 milo 3.66-3.75n.

No. 1 soybeans 5.52-5.60¼n.

Hoppers 64.00-66.00.

Lincoln Grain

Range of cash grain prices paid to farmers by country elevators in the Lincoln area as of 3:30 p.m. Monday.

	Low	High
Wheat No. 2.....	3.72	3.77
Corn No. 2 yellow.....	2.05	2.14
Milo No. 2 Cwt.	3.29	3.36
Soybeans No. 2	5.05	5.19
Oats.....	1.35	1.35

Omaha World-Herald -- 2/6/90

Cash Grains

Omaha (Federal-State Market News) — Spot prices of truck deliveries to Omaha-Council Bluffs elevators Wednesday: No. 1 hard red winter wheat 3.94-3.96, 2-3¢ higher; No. 2 yellow corn 2.17-2.20, unchanged-1¢ lower; No. 2 heavy oats 1.35-1.45, unchanged-2¢ higher; No. 2 yellow grain sorghums (per cwt.) 3.51-3.65, 2¢ lower to 5¢ higher; No. 1 yellow soybeans 5.28-5.38, unchanged-2¢ lower.

Nebraska (Federal-State Market News) — Closing cash grain bids as of 2 p.m. Wednesday at 36 Nebraska elevators: No. 1 hard red winter wheat 3.51-3.96, 1-3¢ higher; No. 2 yellow corn 2.09-2.24, 1¢ lower-2¢ higher; No. 2 yellow grain sorghums 3.25-3.65, unchanged-2¢ lower; No. 1 yellow soybeans 4.83-5.38, unchanged-2¢ lower.

Des Moines (Federal-State Market News) — Wednesday: No. 2 yellow corn mixed lower to 3¢ higher; No. 1 yellow soybeans steady to 2¢ lower. District, corn soybeans: Northwest 2.00-2.11, 5.16-5.24; N. Central 2.05-2.14, 5.17-5.30; Southwest 2.05-2.12, 5.14-5.30; S. Central 2.08-2.22, 5.23-5.41.

Minneapolis (AP) — Wheat receipts 245, a year ago 99. Spring wheat cash trading basis unchanged. No. 1 dark northern ordinary-17 protein up 2½¢ at 4.00½ to 4.05½. Test weight premiums: 0 to 1 cent each ½ pound 58 to 60 lbs; 1 to 2 cent discount for each ½ pound 58 to 56 lbs. No. 1 hard Montana winter 12 percent 4.05½ n to 4.10½ n, up 2.50; 13 percent 4.00½ to 4.05½ down 2½¢ to up 2½¢ Minn-S.D. No. 1 hard winter no quote. No. 1 hard amber durum: Milling 4.00 n to 4.20 bid unchanged; terminal Minneapolis no quote; Duluth 3.95 nominal unchanged.

Kansas City, Mo. (AP) — Wheat 38 cars: unch to 2 lower; No. 2 hard 4.07; No. 3 3.94¼-4.13¼n; No. 2 red wheat 3.95¼-4.03¼n; No. 3 3.84¼-4.02¼n. Corn 89 cars: 1¼ lower to unch; No. 2 white 2.95-3.05n; No. 2 yellow 2.28¼-2.34n; No. 3 2.08¼-2.33n. No. 2 milo 3.66-3.75n. No. 1 soybeans 5.52-5.60¼n. Hoppers 64.00-66.00.

Midwest Wholesale Eggs

Eldridge, Iowa (AP)—Midwest Egg market quotation from the Midwest Egg Producers Co-operative, gradable nest run. Class 1 .57; Class 2 .57; Class 3 .54; Class 4 .48; breaking stock .54.

MARKETING

Exhibit V

BEAT THE COMPETITION

ARIZONA GRAIN COMPANY SELLS
IDENTITY-PRESERVED VARIETIES,
AND IT PAYS



PHOTO BY THE AUTHOR

"WE DID ALMOST \$87 MILLION IN SALES last year," says Arizona Grain Company President John Skelley. The company has 400 grower-members.

By Don Dale

Giving the customer what he wants has always been a sound way of ensuring business success. In today's grain market, where uncertainty can prevail, it has made one Arizona cooperative healthy, wealthy and wise.

By using an identity preservation program, wherein each variety of grain sold

is guaranteed to be 100% what it is contracted to be, Arizona Grain Inc. of Casa Grande, Ariz., has made itself a solid competitor in the international grain market.

"Flour mills like to make sure they have uniformity throughout their contract," says John Skelley, president of Arizona Grain. "They can do that by buying our varieties."

Ultimately, this establishes a solid reputation for the company and its grain, as well as solid prices for the 400 grower members. For Arizona Grain, which has six grain elevators, 75 employees and three seed plants as well as a cattle division, the high prices avert any chance of an identity crisis.

"We did almost \$87 million in gross sales last year," Skelley adds. They sell so much more grain than they can grow that they import trainloads from the Midwest—not of the identity-preserved varieties, obviously.

Arizona Grain uses its identity preservation program for several grains, including barley and hard red wheat, but it is primarily aimed at durum wheat. The process of guaranteeing that its grains are what they say they are is not difficult.

A grower contract sets the variety and its specifications as well as floor prices. Growers are then required to grow the crop to specification and keep it isolated after harvest from other varieties. Forms supplied by the co-op and filled in by the grower for each load act as a control on the system. A load isn't dumped until everything is kosher.

"It takes about 10 seconds to fill it out," Skelley says, "but it's our way of

making sure it's what the grower says it is. And it gives the grower back good information on yield and field numbers."

The co-op sells certified seed to members and buys back certified seed for resale. Valley Seed Company is a co-op subsidiary that makes this easier. It also works closely with a seed research company to develop new varieties that will upgrade the company's product offering.

Pasta. Italian mills have become major customers of the co-op's durum, since those mills require premium wheat for discerning pasta eaters. Desert durum fits their needs exactly, and identity preservation ensures that they get a uniform product with the required specifications for moisture and protein.

Once a company acquires a reputation for service and quality, it can mean a lot to sales.

"We hope it gives us some kind of competitive advantage," Skelley says. "Hopefully it can mean better prices, but if the mills come to us first, that means something. You can't put a price on that."

This year we've had more export sales than we have had in the past," Skelley points out. This was due to being in a position to take advantage of a poor Italian durum crop. They are also cracking the domestic mill market with identity-preserved wheat.

The logistics of keeping their wheat varieties separate consist of ensuring isolation at harvest, at the dump and in storage. There have been a couple of instances of growers cheating, Skelley says, but members in general know that future success depends on delivering the contracted product.

As a consequence, Skelley says, other Arizona companies are trying identity preservation, but their main competition is Canada. He says there is so much durum coming out of Canada that the government can always find enough of a certain quality to compete with a single Arizona company. But the Arizonans have the advantage of growers dedicated to the cause, as well as being able to contract a year in advance for a sure crop of irrigated wheat.

"We're searching for higher-yielding, less water-intensive, higher-quality wheat," Skelley says when asked of the co-op's direction in the future. "That will allow us to stay competitive in the wheat market."

"To continue to get business and increase market share, we have to provide quality and price. If we have the quality we can be price-aggressive."

The Nebraska Wheat Board's efforts may also be producing another effect—a perception among purchasers the world over that Americans can not only sell a good product but a superior one.

Certainly, the opposite sort of impression was left in many minds, says Mercier, after media reports in the early 1980's about the allegedly poor quality of U.S. grain.

Now, she says, the examples of "clean wheat" sales to Finland and other countries could create a highly positive perception abroad of American wheat—and even push a growing market for cleaner, albeit more expensive, wheat.

"If these kinds of things become widely known among the world's wheat buyers, it could certainly help us to compete more effectively, and may create a larger demand for superclean wheat," says Mercier.

She cautions, however, that the U.S. wheat industry may not presently have the capacity to produce a consistently cleaner product than the usual Grade No. 2 shipped out.

"The number of grain elevators with appropriate cleaning facilities is somewhat limited," says Mercier, "and largely concentrated in North Dakota and Minnesota."

At these sites, aspirators and other equipment are used to remove large amounts of dockage and other foreign material. But equipping all elevators with cleaners would be an expensive procedure. If elevators acquire such equipment, says Mercier, it will take place because producers are convinced that it makes economic sense.

With the proper equipment in place, Mercier estimates the cost of cleaning wheat for export at the elevators at about \$25

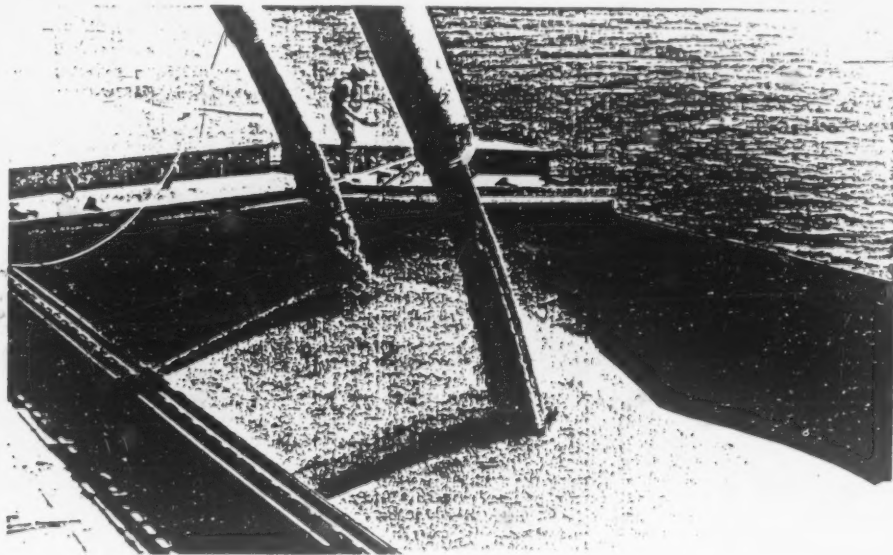
million a year, or a minimum of 2 to 3 cents a bushel. Additional costs are involved in cleaning wheat domestically.

What that estimate does not include, she says, is the "savings involved in reselling the screenings to feed mills," which serves to cut costs.

It also does not include the profitability of selling a higher quality wheat for higher prices.

"That may be the real lesson of the International Multifoods sale to Finland," says Mercier, "that better quality may ultimately lead to greater market access and higher profits." □

[Based largely on information provided by economists Stéphanie Mercier and Edwin Young of the Commodity Economics Division, Economic Research Service.]



PREPARED STATEMENT OF CHARLES R. HURBURGH, JR., ASSOCIATE PROFESSOR,
DEPARTMENT OF AGRICULTURAL ENGINEERING, IOWA STATE UNIVERSITY, AMES, IA

COMMENTS ON THE GRAIN QUALITY INCENTIVES ACT OF 1989

Grain quality is a key element of customer value, along with nominal price, service, terms, and other considerations. Quality differences among suppliers are directly convertible to economic value differences. Once the conversion of quality to price is made, quality and price are on equal footing in the customers' trading preferences.

There are documented cases of U.S. grain quality being inferior to competitors. For example, U.S. soybeans have 1 percent more foreign material, 0.5 percent less protein and 1.5 percent less oil than Brazilian soybeans, while costing as much or more. This combination of quality deficiencies translates into roughly 40-45 cents per bushel disadvantage for the United States. This is 45 cents per bushel of effective price differential we hand to the competition. The U.S.A. has lost about 20 percent share of the Japanese market (about 30 million bushels out of a 150 million bushel market) in the past 4 years, mainly because of quality. These statistics will never show up if the assessment of quality problems is limited to formally filed complaints. The issue is not whether the grade was correct on the sample drawn (which is how the United States checks complaints) but whether U.S. quality in general is competitive for the price in world markets. "Let them pay for higher quality" just doesn't work under those circumstances.

As the recent Office of Technology Assessment grain quality report observed, grain quality problems are more than just standards problems. The proposed legislation, S. 1977, addresses many concepts and issues other than the U.S. standards. Some argue that most of the elements of S. 1977 could be addressed without legislation. While possibly true, this view overlooks the public's right to insist on action, and to require the regulatory process to go forward.

Standards should provide the institutionalized framework for the United States to be quality-competitive in world markets. Customers should not have to work to get our best. Of the 25 sections, 4 deal directly with U.S. grain standards. The longest standards section (title V) requires that the U.S. standards be based on an economic framework—a concept initiated by the Grain Quality Workshops in 1986, and supported by both the Bush administration and USDA at a conference earlier this fall. Another (title VI, section 603) would integrate food safety regulations and grain standards—an idea that is hard to refute in today's consumer climate. On a recent soybean mission to Asia, the single question I heard most was: how was the U.S.A. going to address the chemical residue issue? This was closely followed by how were we going to reduce our foreign material and improve our composition? A survey in Food Technology magazine showed residues to be the No. 1 consumer food safety concern. The last standards sections (titles II, III) would force debate on specific standards changes relating to cleanliness, competitiveness and blending—issues that have long been avoided by the U.S. market.

The blending proposal is likely to be the most controversial issue. I believe there are low quality levels that should not under any circumstances be blended with grain in general commerce. While these levels are probably not all grain below No. 3, national policy is necessary to stimulate the technical debates to define them. The 5-10 percent of U.S. grain that becomes severely deteriorated or dirty contains much higher levels of a whole array of undesirable substances. Blending with better grain does not "upgrade" the poor grain; it just dilutes the defects. Economic logic dictates that customers tacitly adjust average prices based on expectations of quality.

Consistency in grading farmer-delivered grain will be a necessity with more tests and tighter tolerances for defects. All inspections should be in reasonable agreement with FGIS procedures. Only FGIS and its system of agencies should certify persons and equipment for inspecting grain at warehouses. There is no need for this provision to create major additional expense or require intensive governmental presence at country elevators.

Variety development and testing research can change the entire complexion of U.S. grain relative to competitors. For example, most of the soybean protein and oil deficiency (to Brazil) could be eliminated in 2-3 years, simply by removing the worst 25 percent of varieties. Data from Iowa trials show that this sorting probably would not change the average yields. I emphasize the need to fund the various research activities. Statements of support are welcome but they do not generate results.

We must be careful not to overstudy the issue. The overall impact study (title I, section 103) would not, in my judgment, yield useful results because its conclusions

would depend on specific assumptions about how quality would be improved. Each regulatory action will require an impact study of its own.

The Grain Quality Workshops were successful in 1986 because congressional interest added an urgency to the discussions. After the Workshop report, Congress passed legislation enacting the Workshops' economic, end-use philosophy for standards. The partnership worked. Fears of overly restrictive, counterproductive legislation did not materialize. The list of regulatory improvements made since 1985 is considerable, but congressional stimulus caused them to happen. Most have been traceable to the 1986 Commitment to Quality report, which the authors stated was only a beginning. S. 1977 will reenergize the Workshops, and their partnership with Congress. The Workshops will have to evaluate specific regulatory actions that would implement the policy directives of Congress. At the same time, I urge Congress to avoid writing specifics of standards and procedures into law.

In a democracy, the public participates in economic policy decisions through their elected representatives. While the risk of policy going awry is particularly high for thin-margin businesses such as grain trading, government-industry partnerships offer a great opportunity for cooperation and innovation, as some successful capitalist nations have found. Automatic intransigence is a policy that, in the long-run, will magnify the problems needing solution. But, Congress must recognize that seemingly minor changes included through political give and take can have major consequences to an industry that survives on narrow-margins and delicate market balances.

Setting the "rules of play" is a responsibility that no grain handler can risk alone. For example, no merchant could afford to unilaterally forgo all profit opportunities from blending Sample Grade grain into No. 2 or No. 3 cargoes. Therefore, Congress has a significant opportunity to revise the rules for the long-term benefit of all market participants.

There is a cost anytime a business changes its philosophy. These are the costs of staying in business. I doubt that there is anyone in this room who wants America to fade as a dominant supplier of grain, or to be the supplier that always loses when internal or external competition makes more grain available. We have a decision to make—to accept the responsibility of meeting the competition head-on, or to concede that others can produce a better product to be preferred until their supply is exhausted. Other U.S. industries have faced similar choices—American Agriculture must learn from their experiences.

[Attachments follow:]

CONCEPTS AND SPECIFICS

GRAIN QUALITY INCENTIVES ACT

(Opinions by: Dr. Charles R. Hurburgh, Jr.)

The following comments summarize the underlying concepts of the Act, with opinions on their viability and on the specifics as currently written.

Title I, Section 101

Concept: An individual officed in the USDA would be designated to monitor all USDA activities that impact quality, with reporting responsibilities to Congress.

Opinion: Someone needs to view policies as a whole, because more agencies than FGIS are involved. The mechanics of how and who are best evaluated by USDA.

Title I, Section 102

Concept: A 6-month cost-benefit study would be done for improving quality of U.S. grain.

Opinion: Without specific proposals and actions, such a study would not produce useful results. Implementation of the various sections of the Act will require individual impact assessments in the normal course of rulemaking. If the legislation is confined to concepts and goals, then there is no need for this study.

Title I, Section 103

Concept: Unofficial inspections should agree with Official inspections within the operating constraints of country and other interior elevators.

Opinion: This concept is very valid. The need for cost effectiveness and minimal direct involvement of FGIS at elevators should be clear. The greatest need is for type approval of equipment, calibrations and procedures.

Title I, Section 104

Concept: The United States should evaluate possibilities for more worldwide uniformity of standards and procedures.

Opinion: The study would be worthwhile, although progress could be slow.

Title II, Section 105

Concept: FGIS should enforce FDA and EPA regulations on contaminants and trace toxics.

Opinion: FGIS is the only agency with the capability to monitor grain. A critical issue will be the use of the data by the other agencies. Their policies must be defined in concert with the standards, and grain handling realities. The current FDA aflatoxin policy is an example of the difficulties caused by conflicting interagency policy objectives.

Title II, Section 201

Concept: U.S. grain should not contain more foreign material than competitors' grains.

Opinion: The standards can provide the framework for the market to sell cleaner grain. This section is a specific case of the overall standards evaluation required in title V. This title could be combined with title V. Also, "cleanliness" is not a term with a meaning in the standards. Special standards for exports vs. domestic sales could create distortions. The grain can be cleaner in all markets.

Title III, Section 301

Concepts:

(1) Export grain should have overall quality and end-use functionality equal to competitors' grain.

(2) There should be limitations on the blending of high and low quality grain.

Opinion: This is also a special case of title V and could be included as criterion for standards design in that title. Competitors' quality and end-use functionality will be hard to define, but difficulty is no excuse for saying it can't be done.

Tighter factor limits would prevent much blending of low qualities, without requiring a prohibition on operations. A clear definition is needed for what quality levels are so bad as to be unblendable. This definition should arise through regulatory procedures. Some grain is indeed of such poor quality that it should not be added to normal grain, even if the grade limits can still be met. The present language could be construed to prevent any blending if the mix is to be of a higher grade than the lowest quality fraction.

Title IV, Section 401

Concept: Quality of export grain should be accurately certified.

Opinion: This issue has already been addressed in rulemaking, although the outcome is unknown at this time.

Title V, Section 501

Concept: The U.S. grades, standards and procedures should be based on a general framework that supports the previously established objectives and has justification in economic value.

Opinion: The general system of class, grade and criteria factors is essentially what we have now. There is more constraint on the types of factors that go in each category than is needed. This is a regulatory decision, given the framework and objectives. No mention is made of special grade designations. The objective of equal cleanliness and purity (to competitors' grain) (from titles II and III) could be added as an objective or consideration for setting the framework. As written the framework is spelled out in the Act. The only decisions are the factors, their limits and placement in the framework. The description of "unblendable grain" should be included in this section.

Title VI, Section 601

Concept: USDA and the land-grant universities should place more research emphasis on end-use value characteristics.

Opinion: Agree, but actual funding support is needed. The long-term payoff would be great.

Title VI, Section 602

Concept: FGIS should cooperate closely with other research agencies.

Opinion: Agree, and they are doing this, but again funding will be needed.

Title VI, Section 603

Concept: FGIS should add trace toxics and other contaminants to the U.S. standards, and implement testing in cooperation with EPA and FDA.

Opinion: Agree. This is essentially a duplicate of title I, section 105. A food safety objective might be useful in the title V criteria for setting the standards framework. Food safety is a major customer concern. The United States could have a distinct advantage in this area. U.S. standards must evolve to include the health concerns of our customers.

Title VII, Section 701

Concept: Producers should have access to end-use quality information about varieties.

Opinion: Agree. However, the seed label may not be the best place for this information. An alternative could be for the Administrator to maintain a list of testable grain quality factors that have been proven important to one or more end-user groups. Seed companies would be encouraged to have such information available, without a mandatory program. Public releases are covered under title VI, section 601.

Title VII, Section 702

Concept: Variety names should be recorded on warehouse receipts.

Opinion: This would be very hard to do, and would create great paperwork burdens. Objective testing would be preferable. The word "mixed" carries negative connotations in grain standards.

Title VII, Section 703

Concept: NASS should survey grain variety plantings and relate plantings to performance.

Opinion: This data is compiled already by the universities in their variety test programs. Perhaps a biannual summary would be valuable, but a new survey would be costly. The coordinator (title I) could have this responsibility.

Title VIII, Section 801

Concept: Grain quality should be considered in administering all agricultural programs.

Opinion: Agree.

Title VIII, Section 802

Concept: There should be loan and forfeiture premiums for clean grain.

Opinion: Loan premiums do not really reward farmers, and inspection of binned grain will be costly. This is a subset of the larger concept that programs should include market-consistent adjustments for all generally measured quality factors. ASCS could establish a list of grain varieties that are unacceptable for program benefits, based on poor end-use performance. This would provide a stimulus to remove, say, the bottom 10-20 percent of varieties, from an end-use viewpoint. Such a change would correct the soybean problem in 2-5 years. The real issue is whether ASCS will lead or follow the market. I believe they should lead.

Title IX, Section 901

Concept: Producers must maintain the quality of grain in the reserve program.

Opinion: I believe this is already the case, although the incentives are not strong enough.

Title IX, Section 902

Concept: There should be minimum quality standards for grain put into the reserve program.

Opinion: I believe this is already the case although more stringent procedures may be needed.

Title X, Section 1001

Concept: CCC should have minimum acceptance standards for stored grain, and a program of monitoring stored grain quality with disposal of deteriorated stocks.

Opinion: This is a parallel to title IX. Current language specifies grades 1, 2, and 3 as acceptable, and implies that the "unblendable" quality (titles I, V) will be anything below No. 3. These are regulatory issues. The term "inspection" is used to refer to stored grain monitoring. This could be confusing.

Title XI, Section 1101

Concept: Export bonuses that subsidize quality should be authorized.

Opinions: Bonuses would be a rapid way of altering market practices and incentives. The administration and customer targeting could be difficult. More subsidies are counter to the U.S. GATT position.

Title XII, Section 1201

Concept: Quality loss should be covered by Federal Crop Insurance.

Opinion: Agree, although the specific quality level to be used as the loss criterion might be best set by regulatory process. Toxins and other severe deteriorations are loss, but are not in the grades.

Title XIII, Section 1301

Concept: Quality loss should be covered by Federal disaster payments.

Opinion: Agree with the same comment as for title XII.

Title XIV, Section 1401

Concept: USDA should be able, after a study, to offer financial assistance for growers and handlers to improve equipment.

Opinion: Market forces should cause this to happen without Federal budget exposure. Current wording does not include handling equipment, nor does it require that improvements be intended to enhance quality.

IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY,
Ames, IA, February 28, 1990.

The Honorable TOM DASCHLE,
317 Senate Hart Office Building, Washington, DC.

DEAR SENATOR DASCHLE: First let me thank you for inviting me to participate in the February 22 grain quality hearing. I thought the discussion was, for the most part, constructive with witnesses not as far apart on concepts as perhaps the advance publicity would have indicated.

You also said the record would remain open for 5 days, for any followup. I would like to take that opportunity to make several observations.

The basic concern of nearly every witness was how the competitive equilibrium would be reestablished given tighter or revised standards. The realities are that discounts and blending are major sources of revenue that would be diminished by more discriminatory markets. Farmers fear that cost would come back to them in the form of lower prices, higher elevator service fees, and stiffer discounts to some. Handlers fear that competition would force them to "eat" part of the lost blending revenue. In essence, every participant thinks he or she will lose. In the immediate short run, the total value of the crop will not change, just the distribution of value. This fear ignores, however, the inevitable physical change (improvement) in U.S. grain that improved standards would bring. Those being discounted would try to avoid recurrences, and quality would get better, which, by any economic model, makes a

product more attractive, and increases the total pool of revenue available for division among the participants.

Much of the handlers' opposition is not to the concept but the practice of improved standards. They fear that political attractiveness will cause ostensibly simple but in fact unworkable rules, and that regulatory agencies will seize the moment to expand their territories. Thus a position of no legislation, to prevent the risk of unpredictable results.

The solution is a judicious reorganization of the bill such that its concepts are still established as national policy, but avoiding (1) regulation of specific operating practices (as opposed to removing the incentives for those practices) and (2) mandates of individual standards. The testimony clearly showed that each grain, and indeed each quality factor within each grain, had unique aspects not common to others. Rulemaking can accommodate uniqueness better than mandates, so long as there is a central goal being pursued.

One of the most important elements of making the bill work will be oversight, which probably would fall to the "coordinator." An example of the need: In 1986, grain quality legislation was passed that required "normal mathematical procedures" for rounding numbers. This was ostensibly aimed at wheat dockage, which was rounded down to 0.5 percent increments. Wheat was corrected but there is still downward rounding (e.g. sorghum dockage, soybean splits to the next lowest whole percent). Little things but customers don't like them.

The Belgian testimony about cleaning more FM from soybeans than was listed by our certificate is puzzling. This is essentially the same statement as made by the Japanese in the letter I sent you. Because the Belgians took the time to replicate our sampling methods in their elevators, the issue seems to be material evading detection rather than breakage creating more FM. I did not think this was possible with automatic samplers. I understand FGIS is investigating.

Again thank you for the chance to participate. If I can be of further help, please let me know.

Sincerely,

CHARLES R. HURBURGH, JR.,
Associate Professor.

PREPARED STATEMENT OF REGGIE WYCKOFF, PAST PRESIDENT AND CHAIRMAN OF WHEAT QUALITY COMMITTEE, THE NATIONAL ASSOCIATION OF WHEAT GROWERS, GENOA, CO

Mr. Chairman, members of the committee, my name is Reggie Wyckoff. I am the immediate past president of the National Association of Wheat Growers, and chairman of the Association's grain quality committee. I have been an ongoing participant in the industry-wide Grain Quality Workshops and the Federal Grain Inspection Service working group on wheat classification from 1986 to present. However, my best understanding of the importance of grain quality comes from being a wheat producer. My family and I operate a dryland wheat farm near Genoa, Colorado.

Allow me to state for the record that I, like most farmers, firmly believe that I produce and deliver a high-quality, wholesome product. From that basis I can say that I am generally supportive of the goals set forth in S. 1977, the Grain Quality Competitiveness Act of 1989. In fact taken alone, there are several sections of your bill that I believe would help to ensure that the U.S. grain will always meet the world market's dual demands of both price and quality. However, there are other sections of S. 1977, which without modification, would place greater burdens than benefits upon producer income.

As you know all too well, the members of this committee will be faced with some extremely difficult budgetary choices throughout this year. There will be a long and protracted debate over target prices, loan rates and deficiency payments, with the accompanying realization that each and every nickel-per-bushel gained or lost translates into millions of dollars in farm income. Unfortunately, even the most well intentioned legislative changes in grain standards could have a similar, although adverse, impact—an additional 5 cent-per-bushel cost to the farmer to clean grain, or an additional 10 cents dockage at delivery translates into millions of dollars in lost farm income. Therefore, as a producer I am caught between the realization that quality complaints may have cost the U.S. export share and the knowledge that in the past tighter grain standards have resulted in lower wheat prices at the local elevator.

IMPORTANCE OF ENVIRONMENTAL FACTORS

In the case of wheat, our climatic diversity of rainfall, growing season, and soil types combine to give us the capacity to provide a variety of wheats for every baking and milling need. Therefore, we raise the widest selection and some of the highest quality wheat in the world. Despite all of our advances in breeding improvement and selection, the prime cause for quality and cleanliness variability is still the environment. This year, the drought was cause for unusually high protein levels in much of the wheat produced nationwide. Environmental factors can also cause variability in cleanliness, test weight, hardness, sprout damage and even the presence of rusts and bunts (environmentally stressed wheat is more susceptible to disease).

In reviewing the testimony already provided to the subcommittee regarding S. 1977, I was disappointed that no one really differentiated between cleanliness and intrinsic quality. Historically, when people have criticized the quality of our product they actually have been expressing their concern regarding the cleanliness of the grain—generally the level of dockage and foreign material. Again, these are largely the function of environmental conditions, with some years having higher levels of dockage than others. In fact, some classes of wheat historically have higher levels of dockage than others, due to necessary differences in agronomic practices. Although there is room for further improvement in our cleanliness standards, such changes should not occur absent of consideration of the economic impact of such changes.

Unfortunately, a perception has developed that farmers only need to do a better job of harvesting their crop and grain cleanliness problems will be solved! While the combine is probably the most technologically advanced machine utilized by most farmers—its primary purpose is to harvest grain—there are limitations on its ability to also act as a grain cleaner. Furthermore, onfarm grain cleaners are neither an economically viable nor technologically feasible option for many farmers. This fall I cleaned every bushel of grain I produced, however because this was a "weedy year" in my area, I was only able to lower my dockage levels to seven-tenths of a percent dockage.

The concern about cleanliness of wheat is the primary reason many of the present and proposed changes in the grain standards have been oriented toward addressing that problem. Therefore, changes in the reporting of dockage to the nearest tenth of a percentage and restrictions on blending have been viewed by producers as major steps forward in improving both grain quality and cleanliness. As we examine future changes in an effort to advance cleanliness, we need to remember the economical and technological limitations restricting the quality of grain deliverable from the farm.

GRAIN QUALITY WORKSHOPS

I mentioned earlier in my testimony that I have been a participant in the industry-wide Grain Quality Workshops. The workshop process has been highlighted by some as the panacea to grain quality concerns, while others have criticized it as an example that the grains industry (producer, handler and end-user) cannot work together to address grain quality problems.

I'll not attempt to speak for the other grains; however, in the case of wheat, the workshop process has proved remarkably successful. The workshops have been responsible for providing FGIS with direction on several major changes in the wheat standards: the reporting of wheat dockage to the nearest tenth of a percent, the standardization of protein measurement and moisture meters, and the tightening of insect damage allowances. And of course, the grain quality workshops were integrally involved in the evolution of the regulations to prohibit the blending or reintroduction of foreign material and dust back into grain.

Not one of these changes has come about without an economic impact. The effects of tighter dockage standards were still being felt this year as local elevators and grain merchants tightened their minimum acceptable dockage levels. In other parts of the country, similar changes in deliverability were being felt due to tighter standards on insect damaged kernels. Although these changes have been significant, the overall impact will only now begin to be realized as each change results in better quality grain moving into and throughout the system. The best part of the workshop process is that industry-wide involvement minimizes the potential of significant adverse impacts of any proposed change.

I'll not say I have enjoyed every moment of working with the workshop process. I have never received a call from a farmer I represent thanking me for stronger grain standards, actually I have received many stating just the opposite. In fact, I have had my frustrations with the workshop process, especially due to delays in formula-

tion of the shiplot inspection plan, which should address the complaints of buyers of multiple destination cargoes. In light of the slowness of action on this issue, NAWG welcomes the section in S. 1977 calling for an unbiased loading plan.

While FGIS is expected to release a revised loading plan in the upcoming weeks, I am yet to be convinced that it will be unbiased to both buyer and seller. In the case of wheat, the implementation of a revised shiplot inspection plan should improve customer satisfaction in the case of multiple destination shipments. An improved shiplot inspection plan combined with the already adopted and implemented changes for blending, insects, and dockage would make significant systemwide improvements in both cleanliness and quality of wheat.

Last fall, the National Association of Wheat Growers (NAWG) and several other associations wrote to you emphasizing our commitment to resolving quality concerns through the grain quality workshops and the regulatory process. The grower/members of NAWG reemphasized that position early last month when they adopted a resolution reiterating their position that changes in grain standards are best left to the regulatory process.

THE GRAIN QUALITY IMPROVEMENT ACT

What is perhaps the most important part of the legislation is the section which calls for a cost-benefit study of changes in the grain standards. In fact, I am firmly convinced that a provision such as this should be conducted in full before any major changes in rulemaking could be proposed or changes in the standards could be implemented.

Another area of concern is in regard to the wholesomeness of our grain products. Although FGIS is already showing resolve toward developing the ability to test for chemical and mycotoxin residues there is clearly a need for a greater commitment to that need. This is important not only for the purposes of ensuring a safe and wholesome product, but also so that we can accurately gauge our food safety and chemical residue standards against internationally accepted and adopted codes. Incumbent in this is the need for an expansion of FGIS's research budget.

The Grain Quality Incentives Act also tackles the need for greater coordination on quality concerns between agencies both within and outside of USDA. In fact, the National Association of Wheat Growers would encourage you to expand this section to include a study of the inter-relationships involved among the Federal Grain Inspection Service (FGIS), the Animal and Plant Health Inspection Service (APHIS), the Food and Drug Administration (FDA), and the Occupational Safety and Health Administration (OSHA). Such a study should include recommendations for streamlining the process with the goal of ensuring the wholesomeness and quality of our grains. We must halt situations where FGIS inspectors lack the direct authority to disallow practices that damage the reputation of our grain because it is not within their area of responsibility to enforce FDA rules or regulations.

Mr. Chairman, wheat producers welcome the commitment you have shown toward improving the quality, cleanliness and competitiveness of wheat and other grains. The hearing you conducted 2 weeks ago exemplifies your commitment and interest in this issue. One of the outcomes of that hearing illustrated a concern which I have long held—that while we in wheat may have marked significant inroads in addressing cleanliness and quality concerns, it is difficult to estimate the effectiveness of these changes due to the inadequacies of the complaint system. I firmly believe that our existing grain standards may not need to be changed as much as our system of handling and resolving grain quality complaints needs to be overhauled. Clearly, whether it is a formal or informal process, there is a need for a complaint process that would more adequately address grievances between buyer and seller.

The portions of S. 1977 which have caused wheat producers the greatest level of concern are titles II and V of the legislation. The strongest fear is that grain standard changes will be established in legislation that are impossible to meet without an adverse impact upon the livelihood of wheat producers. While a goal of requiring that U.S. grain standards match the standards of our export competitors is laudable, any gain may be negligible compared to the cost. Our grain standards are often compared to those of Canada, however, neither the American producer, grain merchant, nor end-user appear willing to accept the level of intervention and regulation of the industry that is necessary to meet the Canadian standards for only two classes of wheat. Furthermore, no one appears willing to accept the lowered production and handling efficiencies that accompany such extensive regulation. As the OTA study indicated, the Canadian system of varietal licensing is accountable for their wheat production being up to 17 percent less efficient than their U.S. counterpart.

Furthermore, many farmers are concerned that the provision to meet competing country standards implies that dockage and foreign material (FM) would be combined into one grade determining factor, despite the results of a USDA Economic Research Service study showing that the costs are much greater than any benefits. Furthermore, the study shows that the combination of FM and dockage would have its greatest impact upon Spring and Durum wheats.

A further area of concern arises with title III which addresses the practice of blending grain. While no one can advocate the blending of foreign material into grain, or the blending of severely damaged grain into high quality grain, there is a correct and necessary role for blending in the grain handling and processing system. The restrictions now in place on blending have provided for significant reform against the worst abuses of the practice. Although further restrictions may be necessary to ensure that severely damaged wheat is not blended, a total prohibition of the practice is not the answer. Furthermore, while wheat growers welcome the sections in the legislation addressing quality loss compensation, we also realize that this will be debated in the context of revamping crop insurance or establishing a permanent disaster program. Therefore, I would hesitate to accept any changes in grain deliverability standards that may not actually be compensated for by crop insurance or disaster indemnification.

In summary, I have great respect for the personal involvement Senators Daschle and Bond have exhibited toward addressing the grain quality issue. Furthermore, the members of the National Association of Wheat Growers have found the Senators and their staff to be exceedingly receptive to constructive criticism of the legislation. We look forward to working with you on the legislative redraft of the Grain Quality Competitiveness Act of 1989. Again, thank you for allowing me the privilege of testifying before the committee on this legislation.

PREPARED STATEMENT OF LOREN DOLL, PRESIDENT, IRSIK & DOLL FEED SERVICES, INC.,
DODGE CITY, KS

My name is Loren Doll, I am president of Irsik & Doll Feed Services, a family corporation engaged in buying, selling and storing grain for farmer producers at six locations in western and central Kansas. Our operations include a grain terminal elevator at Hutchinson, Kansas where we have the capacity to load 120 car unit trains for shipment to Gulf ports.

Our storage capacity is some 8 million bushels. Our company also engages in commercial cattle feeding in western Kansas, our one time pen capacity is 110,000 head. One million bushels of feed grain per month are consumed in this process of converting grain to beef. In an average year, our elevators will receive from farmers 3 million bushels of feed grains, 2½ million bushels of HRW wheat. Feed grains do not present a problem in our operations as we are an end user with any unfit feed grains being refused at our several locations. The problems exist in the marketing of the food grain—HRW wheat.

The United States produces some 2 billion bushels of all classes of wheat per year, domestic demand uses one-third of this amount leaving 1.3 billion bushels for export. The producer and we as primary receivers of harvested wheat have very little control over quality of wheat loaded for export. We have found that domestic mills are quite selective in their purchases of wheat for milling, just as we are as end users of feed grains. Domestic millers are informed in advance as to the quality factors in wheat shipments from country elevators and this system works well. Grading is done by State grain inspectors at the originating country elevator, the mill buyer then can choose whichever rail cars that fit his needs. Rail cars with deficient quality factors are routed to exporters who purchase this grain at a discount. In this manner, lower quality unclean grain is segregated from higher quality grain, lower quality being utilized in export sales, higher quality to domestic mills. This works well for domestic mills which can pick and choose from a huge volume of grain made available from sales by farmers. We follow the same pattern in selecting grain for our feeding operations. Problems arise as this segregated grain continues through the marketing system.

Unclean and low quality wheats gravitate to export terminals, effectively removed from contaminating the supply which is processed in domestic mills. Exporters are concerned with meeting tolerances established under U.S. grain standards. The domestic miller, of course, is aware of these standards but he is looking for something more, such as, levels of broken kernels, foreign materials, dockage, IDK count, wheat of other classes, and other grains. He is able to pick and choose from the huge supplies available in our country. The importing nation through its buyers do

not have this advantage. They are required to rely on U.S. grain standards, knowing full well that whatever tolerances are present in each grade, the wheat will just barely clear the limits. The Cu-Sum plan, allows grain to be exported that does not meet tolerance levels as the averages are the determining factor. This puts the buyer at a disadvantage and our consistent practice of blending low quality and unclean wheats with higher quality to barely meet specs has resulted in loss of markets all over the world. Perhaps it is unfair to say "all exporters" but the bottom line is that we have lost market share to other exporting nations because of lower quality unclean grain originating in the United States. The problem has been ongoing and increased awareness of quality factors by importers makes for urgency that we as sellers of grain do a better job. In Kansas, the largest wheat producing State in the Nation, concern regarding quality is becoming more evident but the average producer is powerless to make changes. Commodity groups have been formed, self-financed, to deal with the problem. After 35 years of highlighting the problems, they still exist. Where else can we turn but to government officials to create and enforce standards for exported wheat raised on our farms that will satisfy the buyer? Standards that reflect the high quality and cleanliness when the grain is first harvested. Trade groups from foreign countries have visited our areas and are surprised at the quality of newly harvested wheat. It is quite clear that as this wheat travels through commercial channels that much of its inherent good qualities are lost, some through accident some through design.

A year ago our company began a "Finest Wheat" program. It is a program to reward the farmer who delivered clean, high quality wheat to our elevators. It has made for awareness that we producers are selling a food product and we need to do all possible to ensure cleanliness and maintaining quality from the field to the end user. Reception by producers has been gratifying. At our country elevators, office personnel have been equipped with testing equipment to measure cleanliness and quality. Elevator personnel have been instructed in the proper care and handling of the food grain—wheat. At our terminal elevator location, we have installed high speed cleaning equipment and are offering to guarantee the loading of high quality clean wheat in quantities suitable for unit train shipment to Gulf ports. We will contract with a public elevator to load onship this quality grain so that end users are assured of quality in excess of present U.S. grain standards. Market conditions since the 1989 harvest season have been such that domestic mills have been the buyers of our wheat, no export sales have been made. This effort is minute compared to the need for overhauling the marketing practices of U.S. wheat exporters. The EEP program has been responsible for moving huge amounts of wheat from long term storage in grain elevators across the Nation. This program has moved the grain because of reduced prices under the program. I have no information as to quality factors in this movement of mostly CCC owned wheat but it would have been an opportunity to prove to foreign buyers that the United States does indeed raise high quality clean wheat and they can deliver it to buyers. The standards now in effect and the Cu-Sum plan does nothing to assure buyers that U.S. wheat is, at the very least, comparable to wheat available from other exporting nations. The bill now under consideration, S. 1977, contains language that directs the Secretary of Agriculture to pursue a program to standardize grading on a world-wide basis. This would be beneficial to the industry if we are indeed sincere in our efforts to export high quality wheat. It is evident that a gap exists in standards among wheat exporting nations. Foreign buyers have told us for years that our system is inadequate. I understand the Canadians clean wheat just before loading on a vessel. They also have a grading system for screenings removed from the wheat to facilitate the marketing of this byproduct. In the United States, no such program is in effect. Screenings are disposed of in a haphazard manner. It appears the industry has much to learn from standard practices in other countries. In our profit driven economy, it appears the industry is taking the short term view of immediate returns, the long range view of building a reputation as a dependable supplier of high quality clean grain is not receiving consideration. It is necessary to have regulations in the industry for the common good. It is standard practice to not really violate the regulations, but to use every avenue or loophole for financial gain.

Discussions of grain quality often leads to the subject of who is going to pay to clean up our exported wheat. The answer is that it is already being paid for by restricted markets, lower prices for our wheat, the need for increased government subsidies to move wheat and from all this the farmer receives a lower net price for his production. We producers in Kansas are ready for a Grain Quality Incentive Act. We have encouraged better grain quality for years. We have organized groups of producers to promote our product. We realize steps must be taken to provide to the buyer a product that fits his needs—whether a domestic buyer or a foreign buyer.

We ask that these steps be taken by the Congress because the industry has failed, under the present framework, to do the job.

PREPARED STATEMENT OF TERRY DETRICK, VICE PRESIDENT, OKLAHOMA FARMERS UNION, AMES, OK, TESTIFYING ON BEHALF OF THE NATIONAL FARMERS UNION

Thank you, Mr. Chairman. My name is Terry Detrick, and I am the vice president of Oklahoma Farmers Union and a wheat farmer southwest of Enid, Oklahoma. I'm here today representing National Farmers Union as I do on the Wheat Classification Working Group. National Farmers Union is a grassroots, general purpose, farm organization with over 300,000 family memberships, including many grain farmers.

Farmers hurt when they hear complaints about grain quality. The fact is that the nations competing with the United States in the international arena are selling a better quality product than we are. When faced with the decision of where to buy, with all other factors being equal, the logical decision is to buy the best quality available and the United States oftentimes is the last choice.

The American farmer knows that when he sells grain of inferior quality he will be paid a lower price. This is expected and accepted by farmers. When the grain is sold to the elevators in different grades and prices the farmer cannot understand why it is that the elevator is able to blend his lower quality grain which he was penalized for and upgrade it to No. 2 or better without paying a premium for the top quality grain. When the grade standards are so loose that poor quality grain is sold for top grade, farmers lose faith in the system. The complaints of foreign buyers about the quality of the American grain also reinforce the fears of the producers. This system must be made to work for all parties concerned—the producer, handler, shipper, exporter, and buyer.

The U.S. producers are paying to send shrunken, broken, and foreign material to importing countries and it costs them money to remove it. The American producer could use the unwanted grains to feed animals or produce alcohol instead of paying for a long trip to a buyer who would pay more if it were removed in the first place.

Farmers will produce any crop quality that the market is willing to pay for, but there are many problems to overcome before the farm production end of the process is addressed.

The most important factor in grain standards is the confidence of all parties concerned in the grading and testing of the product by trained, unbiased inspectors with standard rules and equipment. We have a long way to go before these problems are solved, but this bill is an opportunity to rectify many of these problem areas.

Since approximately 99.7 percent of our export wheat goes No. 2 or better and since our export wheat is usually tendered No. 2 or better, we believe that a pricing structure using No. 2 as a benchmark would be workable. A premium could be paid for No. 1 wheat and a discount for No. 3 wheat.

Farmers and plant breeders need lead time to provide product to the market. The changes that are envisioned in this bill will need a good deal of lead time if total disaster is to be averted. Farmers are not avid readers of the Federal Register so the time needed to make them aware of the changes is much greater than one would think.

The Wheat Classification Working Group is developing recommendations for the implementation of possible classification standards. This working group has endorsed an 18-month lead time as a minimum before any substantial market-altering changes are implemented. We endorse this lead time position and feel that the new wheat classification methods are another reason for more research.

Current government farm programs encourage quantity over quality, even though the product is considered undesirable in the industry; a move to bushel-based allotments will provide the incentives to reward the producer for growing what the buyers and users want.

Agriculture colleges need more research dollars as we move from just producing bushels to producing grain of superior quality. We strongly urge that more money be appropriated for research on quality of wheat and definition of quality based upon different end-use needs. We also strongly suggest that an allotment of bushels and pounds would encourage production of quality wheat rather than quantity. We also need research to investigate what properties are needed for wheat to perform for a specific end use.

Federal crop insurance should indemnify the farmer for loss of crop quality. The financial loss to a farmer due to a decrease in quality can be just as devastating as the loss of yield. We must understand that a farmer is concerned about the amount

of money he has left to pay the bills and not the number of bushels harvested per acre.

Loans and grants to upgrade cleaning equipment for farm and local elevator facilities will go a long way toward removing shrunken, broken, and foreign matter at the place where the cleanings will have economic value for local livestock feed and we will save on transportation costs.

Farmers world-wide are concerned about weed control and if the U.S. grain exports are to be as weed seed free as we can economically make them, we must encourage their removal. Weed seeds are usually very high in protein and if removed from the wheat, can make great livestock feed additives with a positive value instead of becoming a point of disagreement with an importing nation.

American grain farmers are tired of hearing poor grain quality stories when they have delivered top quality grain to the elevator in the first place. The standard response from grain shippers is that the grain that was sent fulfilled the contract signed by the buyer and seller. We must promote a higher standard in the glutted world grain markets. The competition in the international grain arena is mandating that the United States provide the best quality product in the best condition at fair market prices or the market will only come to the United States when all other producers are out of grain.

American farmers will grow, deliver, develop, and compete with any other farmer anywhere in the world if they are given the opportunity. The standards need to be clear, realistic, and known in advance. When these standards are adhered to, the American farmer will stand up to any test anywhere in the world.

American farmers know that the cost of correcting grain quality problems will be borne by the farmer himself. This is the way the system works and knowing that is the case, the farmer wants to be as competitive in every sale of grain as humanly possible. When the U.S. farmer is dealing on a level playing field, he will perform with distinction.

[The prepared statements of Randy Marten, Fred A. Cholic, and Andrew Whisenhunt follow:]



AMERICAN BAKERS ASSOCIATION

Statement by Mr. Randy Marten, Representing the American Bakers Association before the Sub-Committee on Agricultural Research and General Legislation of the Senate Committee on Agriculture and Forestry

February 22, 1990

My name is Randy Marten. I am Vice President for Materials Acquisition and Transportation for Campbell Taggart Inc. I am here today on behalf of The American Bakers Association, the Biscuit and Cracker Manufacturers Association, and the Retail Bakers of America. Together, our associations represent companies that produce approximately 80 percent of all U.S. bakery products. The U.S. baking industry transforms more than 300 million hundredweight of flour, from nearly 700 million bushels of wheat into a wide variety of bakery products each year.

We commend Senator Daschle, Senator Bond, and others for introducing the Grain Quality Incentives Act of 1989. Most sections of the bill are directed toward the improvement of grain quality and cleanliness in order to compete more vigorously in world markets. We support that objective. We wish to call the Committee's attention to the fact that for wheat, quality requirements in respect to the eventual end-uses of the grain are increasingly similar for export and domestic markets. Physical soundness and purity are important criteria for wheat quality. But it is the intrinsic characteristics of wheat to efficiently and consistently produce the baked products desired by consumers that is crucial. We believe that is true for other grains, and for oilseeds as well.

Our concern about the baking performance of new wheat varieties is heightened by recent developments in plant breeding technology. A few wheat varieties brought from Russia and Turkey dominated U.S. hard winter wheat production from the late 19th century to about 1940. Since then, dozens of new

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varieties have been developed, released, improved, and then superseded in the past 50 years. Of the five leading hard winter wheat varieties in Kansas in 1980 none remained as a leading variety in 1989. This rapid turnover, with only limited end use testing of the new varieties being released, represents a cost to the domestic market and a risk to our export markets. It is of concern not only to bread makers, but to cookie and cracker manufacturers as well. For them, protein quality and excessive kernel hardness are the major issues.

The quality of wheat declined steadily during the 1970's and 1980's concurrent with the proliferation of varieties. Controlled laboratory bake tests for bread indicate that only 50 percent of flour samples tested in 1987 fell in the upper half of possible performance scores, against 96 percent in 1975. This is shown in detail in an Annex to my testimony which we wish to submit for the record. The industry feels that economic incentives need to be available to plant breeders and wheat producers to encourage production of better quality wheat in the interest of both exports and U.S. consumers of bakery products.

Our recommendations in respect to the bill are as follows:

1. Quality considerations for domestic use should be given equal billing with export requirements throughout the bill. The studies called for in Sec. 102 and 104 should deal explicitly with quality considerations for baking and other domestic uses as well as with the export factors cited in the bill. The Department of Agriculture should conduct these studies in association with representatives of State Agricultural Experiment Stations, farm groups,

grain exporters, the cereal foods industries, and the Office of Technology Assessment.

2. End-use evaluation of new wheat varieties for domestic and export use should be given a high priority in research conducted by the USDA and the State Experiment Stations. The federal Wheat Quality Laboratories in Kansas, Ohio, North Dakota, and the state of Washington need increased support and direction in this regard. These labs, properly staffed and equipped, have the potential to lead the way in the development of wheat varieties combining the needed attributes of yield, disease resistance, and performance or end use. Also, these labs could be in the forefront of developing improved flour quality tests for different baking needs to facilitate the screening of new varieties.

These issues should be addressed more directly in the bill. We recommend that Sec. 601 be amended to include the certification of new wheat cultivars, and establishment of national criteria or guidelines for the release of new varieties of wheat by public and private plant breeders. We believe this consideration may apply also to other grains and to oilseeds.

3. We support the identification of performance characteristics of seed, by varieties, in the manner suggested in Sec. 701. These may need to be quite general, since environmental as well as genetic factors influence end-use

quality. This would serve as a guideline for farmers in selecting seed varieties, and as a general educational device for all elements of the industry. Sec. 702, however, relating to identifying varieties on warehouse receipts, may not be feasible.

4. We strongly support Sec. 703, providing for periodic compilation of the distribution and relative importance of grain varieties nationally. This report should also summarize the relevant quality characteristics of leading and emerging varieties, including end-use properties. This would aid in performance labelling of varieties, as provided in Sec. 701.
5. We support the idea of offering incentives through the price support system for clean and high quality grain. We note, however, that this has been studied by USDA and applied in various ways for many years with little success. We call the Committee's attention to an effective procedure that was once used for wheat -- the "Undesirable Varieties" list. When the price support loan was the key factor supporting prices, wheats placed on this list by USDA were usually withdrawn from production within a few years. Consideration should be given to the development of a new procedure, adapted to the fact that deficiency payments rather than price support loans now provide the most important financial incentives to farmers.

6. The language in Sec. 301 which would authorize the Secretary to prohibit or limit blending of grains could present difficult problems for the grain industry. There may be some merchandizing abuses relating primarily to grain for export that merit Congressional action, however. Provisions in Titles IX to XIII relating to grain quality in the Farmer-Owned Reserve, CCC, EEP, Crop Insurance and Disaster Relief Programs may be helpful, but general improvements in U.S. grain quality will help those programs as well.

Finally, the baking industry recognizes its responsibility to define its needs clearly, and to communicate those needs to growers, seed breeders, and millers. We look forward to working with Congress to enact key portions of this bill in 1990, and to working with all interested parties in a cooperative environment to improve grain quality across the board.

"A PERSPECTIVE FOR IMPROVED FLOUR QUALITY"

A statement submitted by the American Bakers Association at the USDA
Agricultural Products Quality and Competitiveness Conference.

June 30, 1988
St. Louis, MO

FLOUR QUALITY HAS CHANGED

One intense area of discussion involves whether or not wheat quality and thus flour performance has indeed declined over the past number of years.

The answer to this, like many other issues surrounding grain, is not simple. Various changes over time have occurred in the milling and baking processes contributing to confusion surrounding this issue.

However, controlled laboratory bake tests and analyses performed in an exacting and controlled manner, spanning more than 25 years, indicates there has indeed been a decline in flour quality and functional performance in the bake shop.

We are going to address three particular areas today regarding such changes. The first is the decrease in bake scores over the past 12 years obtained using a standardized bake test. The second is the decrease in tolerance toward mixing variations over the same 12 year period. The third is a decrease in water absorption capabilities.

Shown on the first overhead (Appendix A) are the changes in bake scores since 1975.

The data shown in this table is taken from baking performance results of flours from more than two dozen mill locations in the United States. Let me add at this point that these values presented in Appendix A summarize grain and texture scores and also the tolerance of the flour at various mixing variations.

As can be noted, in 1975 79% of the samples were tested A-8 or better with 16% A-7. 1981 produced similar scores with the exception of the higher percentage being grouped in the A-8 category. However, from 1984 to present, one can easily see the reduction in scores, particularly in the A-8 category with a tremendous increase in scores in the B-6 category.

Flour tolerance is judged two ways. The first is mixing tolerance, and the second is fermentation tolerance.

There is great interest in flours that yield good quality bread at reduced mixing requirements. From a baker's perspective, there is no doubt that a decrease in mixing time has the potential for increasing efficiencies and the number of doughs that can be produced, if the equipment further on down the line will also accommodate it.

Flour that in the past might have produced a good quality bread over a 4 minute mixing range now appears to yield a good quality bread over only a 2 minute mixing range. While a part of this decrease might be associated with a lower average mixing time for today's flour, this decrease is not sufficient to explain the entire loss in mixing tolerance.

Fermentation tolerance of flour is also important. In a sponge and dough operation the dough may be much more critical to fermentation and mix in the producing plant and less forgiving of normal mechanical breakdowns or delays in the production process after the mixer. For example, if a normal 4-hour fermentation time is extended to 4 1/2 or 5 hours due to mechanical difficulties, the likelihood of having a tolerable flour was greater 10 years ago than today.

So, when we speak of mix time being reduced, our concern primarily lies in the fact that the tolerance associated with it has also been reduced and the demands on the production process have become much more critical.

Thirdly, a decrease in baking absorption was also noted during this 12 year period. This decrease has an important impact both on the baker and consumer.

An example would be if you take a simple flour/water combination and take 100 pounds of flour and add 65 pounds of water, you are able to make 165 loaves of bread, which you would then have to sell. However, if you are only able to add 61 pounds of water to this, you would only have 161 loaves, resulting in four units less product that you as a baker could put on the market from the same quantity of flour. This economic impact of having fewer units to sell is very real and ultimately must be passed on to the consumer.

WHY CHANGES?

Following that review of what we bakers perceive to be distinct flour characteristic changes over the past 12 years (1975-1987), let me repeat that those changes were taken from commercially milled samples performed in a bake lab facility that utilizes the same procedure, people, and equipment in 1975 as it did in 1987. Thus, this approach eliminates any process changes that may have taken place in commercial baking operations during this same period.

Therefore, what do we see as being those areas that have impacted these changes?

We feel there are essentially six areas that may have contributed. The six areas are: genetics, agronomics, milling, identity preserved marketing, wheat protein, and varietal proliferation.

Let us take a moment to give a quick overview of how each of these areas may be impacting ultimate flour quality.

The characteristics that are genetically being bred into various wheat varieties were such that they naturally produced a wheat with higher absorption, greater tolerance and preferred interior grain and texture characteristics in 1975. The demands and economic message sent to the breeder from the producer recently were that the need existed for higher yielding varieties that resisted disease and other growing problems. The wheat breeding community responded to these challenges, and in doing so produced the semi-dwarf varieties which indeed greatly increased the productivity of the American and world wheat producer and also provided disease resistance that is a tremendous benefit to the production of food in the world. However, over the course of this breeding process, those factors that directly contribute to flour quality apparently went by the wayside because they simply were not priorities at the time.

Secondly, the agronomics issue is less clear as to distinct change; possibly increased irrigation and greater fertilization has impacted bake flour quality. We are not prepared to draw a direct conclusion that either of those factors or others have impacted flour performance quality, but only that it is possible.

Thirdly, the miller has had the same economic pressures placed upon him for efficiencies and profitability as everyone in industry today. Therefore, it again is possible that changes in milling practices such as quantities of wheat milled per square inch of break roll or flour cloth sizes or cleaning equipment per bushel of wheat may be impacting ultimate flour quality. Also, the number of mill-sponsored bake labs has decreased as it was previously common to have bake testing capacity at practically each milling location.

In addition, the previous practice of identity preserving and trading known lots of wheat is rare today. This suggests a situation where some wheat going to the mill may be of unknown baking quality.

The decline in functional performance of flour since the early 1960's has occurred in conjunction with a decline in the average protein content of the wheat crop since 1976 (Appendix B). During 1976/81 Kansas proteins averaged 12.2%, while 1982/87 protein averaged 11.5%.

In a like manner, the distribution of protein has shown an overall decline since 1976. The distribution of protein below 12% has shown a significant increase while the distribution above 12% has declined.

In order to meet the nutritional protein claims of standard pan bread, the industry needs flour with a minimum protein of 10.75%, which translates into wheat with a protein content of just under 12%. If the average protein of the Kansas crop continues its downward trend established over the last 12 years, current labeling may have to be revised.

This brings us to the last issue of varietal proliferation on the part of the U.S. wheat producers. There is no doubt that there has been a proliferation in wheat varieties throughout this Country over the last 10 to 12 years. This overhead (Appendix C) indicates that in 1977 there were 11 varieties that represented the vast majority of all wheat planted in Kansas and in 1986, 43 varieties were planted.

During this same time frame, wheat varieties that represented 85% of the acreage planted in Kansas in 1986 did not even exist in 1977, and of the varieties planted in 1977 (all 100%) now represent only 15% of the 1986 acres planted (Appendix D).

It would appear that the varieties planted in 1977 contained characteristics that provided better baking quality and that the evolution of more and newer varieties has indeed had an impact on flour quality.

WHAT IS FLOUR QUALITY?

If we have done our job correctly up to this point, you are asking the question, "Well, Mr. Baker, what is flour quality? What is it that you really want?" Let us take a moment and try to provide a perspective of what is important to the miller and wholesale baker.

Let us first state that wheat quality is not necessarily determined by the parameters that are used to measure it. Test weight, protein and dockage on wheat are only weak indicators of what the ultimate milling characteristics of wheat are.

In that same regard, protein, ash and Agtron have always been thought of as indicators of flour quality, but in reality do not really indicate what the baking quality of that flour will be in the production process.

The consumption and enjoyment of baked goods on the part of the consumer is really the essence of this whole issue, whether consumed in the United States, Russia, Egypt, China, India or elsewhere.

Therefore, what we all should be striving for is a flour that will produce a product that has a higher degree of appeal and acceptance in whatever its use may be to the consumer.

We think it extremely logical that if the flour available to the manufacturing facility has more of those characteristics, be it grain and texture, spread factor or volume, allowing the baker to produce a higher quality product, then that product will find greater acceptance which will encourage consumption, and be better for the baker, miller, producer, and everyone up and down the marketing chain.

Also, what is important to the baker is a uniformity from a micro standpoint on a day-to-day basis and on a macro standpoint from week to week and month to month over the course of the crop year.

These challenges fall directly on the grain handling and milling industry as the proliferation of varieties makes it more and more difficult to know what the functional characteristics of the wheat being delivered to the elevator may be at any one point in time, and simply force greater demands upon the blending and milling process.

Nonetheless, these demands are necessary so that the baker can, at any point in time as he draws flour into the mixer, be able to predict its response based on the flour drawn into the mixer 15 minutes previous or two days previous.

In summary, quality, as defined from a baker's perspective, is a flour that has functionality to enhance the product value to the consumer and also the consistency to enhance its ability to be correctly and properly used at the bakery.

WHAT ARE THE SOLUTIONS?

Again, we would not be correctly representing our industry if we left today without stating exactly what it is we feel are potential solutions to this overall wheat quality and flour quality situation.

Therefore, let us put this in perspective.

First of all, in the short term, the various parties involved need to continue talking or even begin talking. The baker needs to fully communicate to the flour miller exactly what the use of his product is so that a flour can be tailored to his particular requirements. Also, in the absence of a valid analytical test that can accurately predict the functionality of flour at the mixer, the baker must communicate to the miller what is observed so appropriate changes can be discussed and possibly implemented.

Furthermore, the miller must be talking with his grain merchants or merchandising companies that supply wheat as to what the millers' ultimate customers', the bakers, needs are in terms of consistent wheat drawn from areas that have known characteristics in abundant quantities so that the product can be duplicated as the year progresses. Also, the merchant needs to subsequently communicate with the producer what their customers, the millers, are demanding so that this information can have an impact on what seed the producer chooses to buy and what characteristics the breeder ultimately chooses to produce.

Secondly, and we put this in the short-term category, an analytical or rheological test needs to be developed which will accurately predict consistency and functional performance along all levels of the chain. The test would provide an indication of functional performance and uniformity for the baker, predictability for the flour miller, and the quick ability to screen numerous varieties as the breeder is developing those with good yield and disease-resistant characteristics, but also screening for baking and milling properties.

We put this into the short-term category because we have so much faith in the technology of the world today that we believe, with a concentrated effort, this test can indeed be quickly developed and simply needs the resources and priority to do so.

Now to blend somewhat the short-term with the long-term. One of the quickest ways to get our flour quality improved is with a different economic message being delivered back to the producer communicating the needs of the end user.

To a great degree, we fault the end user of wheat and flour products, be it the gluten manufacturer, the baker or any number of other end users, as to exactly what characteristics are superior and therefore have greater economic value to the user than do others. Once the user makes these differences known and puts a value on them, that economic message will readily be transmitted back from the baker to the miller to the merchandiser to the producer and to the breeder.

Also, along these same lines, there has been an economic message sent by the Government to the producer resulting in the producer concentrating on quantity of production. The farm programs of the past have sent the message to the producer that production was a higher priority than the value or performance of that production. Until that economic message changes on the part of the Government, change will be very difficult.

We recommend provisions in the 1990 farm bill which make the production of quality wheats a high priority. This legislation would demand quality of production, rather than just quantity of production.

Finally, what is definitely in the long-term category is that of providing additional wheat breeding and screening assistance.

We speak directly of the USDA hard wheat quality lab in Manhattan, Kansas, which over the past few years has seen both its funding and personnel support decreased.

This lab, properly staffed, should have the potential to assist in the screening process and lead the way in the development of wheat varieties combining all the attributes of yield, disease resistance and performance or end use. Also, this lab could be in the forefront of developing the flour quality tests spoken of earlier.

SUMMARY

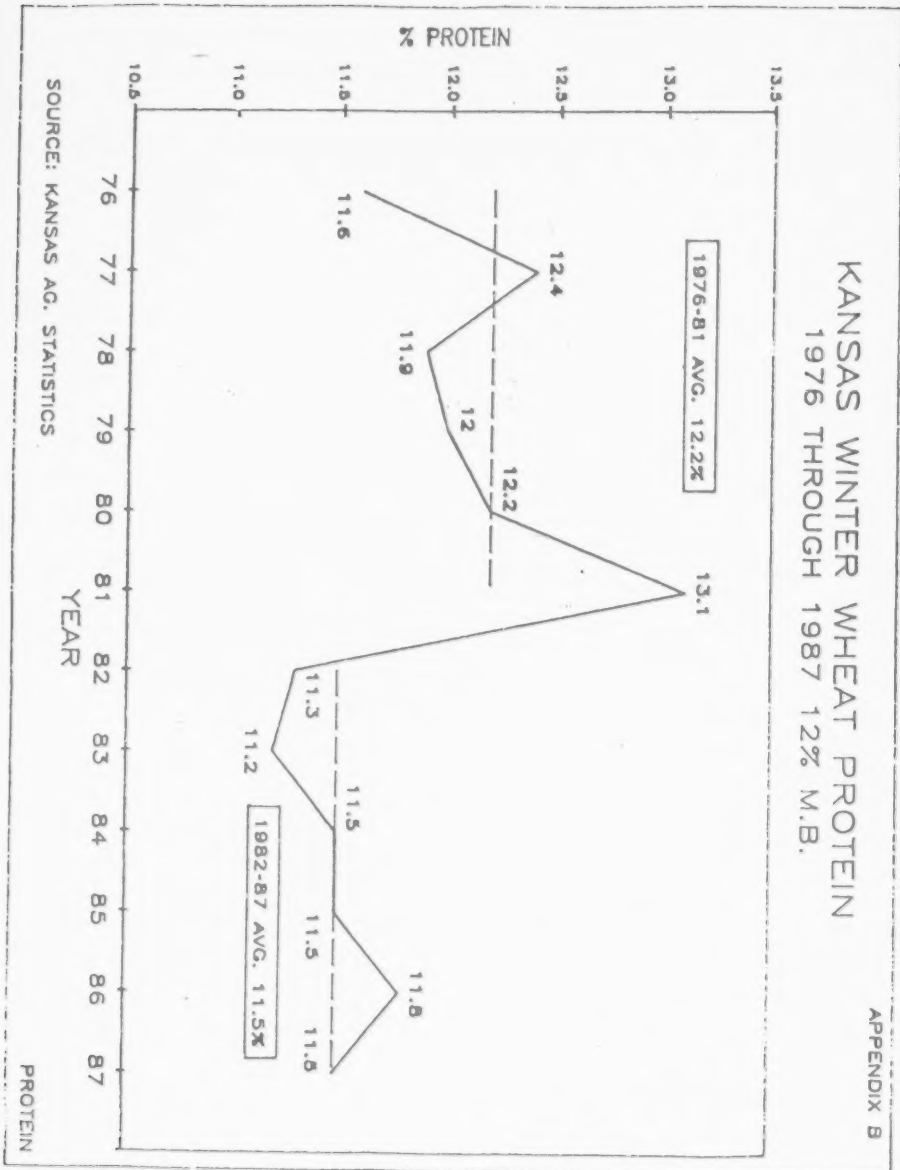
Ladies and gentlemen, it has certainly been a pleasure to represent the ABA here today. We sincerely hope that these comments have addressed some of the more important critical issues regarding the wheat and flour quality area. Thank you.

FLOUR SCORES

BAKE PERFORMANCE	CALENDAR YEAR					
	1975	1981	1984	1986	1987	1988
AA-10	2.4%	-----	-----	-----	-----	-----
A-9	24.4%	12.0%	-----	-----	-----	-----
A-8	53.0%	70.6%	24.5%	1.8%	.2%	-----
A-7	16.0%	12.0%	58.5%	52.9%	48.5%	29.6%
B-6	2.4%	4.2%	15.4%	39.9%	34.5%	43.9%
B-5	.9%	1.2%	1.6%	4.6%	14.8%	22.9%
B-4	.4%	-----	-----	.6%	1.7%	3.6%
C-3	.5%	-----	-----	.2%	.3%	-----
C-2	-----	-----	-----	-----	-----	-----
C-1	-----	-----	-----	-----	-----	-----

KANSAS WINTER WHEAT PROTEIN 1976 THROUGH 1987 12% M.B.

APPENDIX B



NUMBER OF WHEAT
VARIETY SEEDED
(KANSAS)

1977	11
1978	14
1979	16
1980	17
1981	19
1982	20
1983	23
1984	29
1985	33
1986	43
1977	43

* EXCLUDES "OTHER" CATEGORY

CHANGE IN VARIETIES OF KANSAS WHEATS

- WHEAT VARIETIES THAT REPRESENTED 85% OF THE ACREAGE PLANTED IN KANSAS IN 1986 DID NOT EXIST IN 1977.
- OF THE VARIETIES PLANTED IN 1977 (100%), THEY REPRESENT ONLY 15% OF 1986 ACRES PLANTED.

**Testimony for the hearing titled, "Preparation for the 1990 Farm Bill:
Enhancing Grain Quality".**

**Presented by: Dr. Fred A. Cholick, Representing the National Wheat
Improvement Committee (NWIC).**

By way of introduction, the NWIC has members representing the four regions of the U.S. where wheat is produced. The members are elected by the wheat researchers in their region. We have individuals from the USDA-ARS, Land Grant Universities, Private Industry, and one representative from the National Wheat Growers. The disciplines represented include plant breeders, cereal technologists, genetics/cytogenetics, plant pathologists, germplasm propagation and dissemination, and a wheat producer. I'm a representative from the Great Plains Spring Wheat Region and the spring wheat breeder at South Dakota State University.

SUMMARY

We are very supportive of the evaluation of the quality properties and enthusiastically agree with the goal to improve the competitiveness of U.S. grain. Testimony will focus on Title VI- Grain Quality Research and Testing and Title VII- Variety Performance Information of the "Grain Quality Incentive Act of 1989" (S. 1977). Due to the complexity of the grain quality issue, this testimony will concentrate on intrinsic quality characteristics and use examples from wheat.

A critical premise for both of these sections of the bill is that the variety alone is an excellent indicator of intrinsic quality characteristics, and it solely can define intrinsic quality. This premise is incorrect due to the major influence of environment and how varieties react differently to changing environments. The performance of a variety is determined by its genetic makeup and the environment under which it is grown. Producers ability to manage inputs can modify the environment's impact on the variety but only to a limited extent. In any given year, or from location to location, the performance differences

among a given group of varieties due to the effects of environment are likely to be greater than the genetics differences expressed by the varieties. The environment greatly effects both the agronomic and intrinsic quality traits, and the evaluation of these effects is the major contributing factor to the cost of varietal development. Therefore, just identifying the variety will do little to accomplish the goal of improving the competitiveness of U.S. grain. To help attain that goal, a survey of the varieties, identification of major geographical-environmental areas, and the end-use quality survey within these areas to determine intrinsic quality are all required. This information needs to be distributed to the domestic and international customers so they could purchase the quality desired.

A second premise is that plant breeders have bred only for yield and have ignored intrinsic quality. This is also a false premise since quality evaluations are an integral component of all breeding programs with which I'm familiar. Grain yield is an important objective as are other plant traits and particularly disease resistances, however these must all be balanced with intrinsic quality to provide the producer with the best variety possible. Producers choose to grow a variety based on a number of factors such as yield, agronomic traits, disease resistance, and intrinsic quality to maximize the return on their investment.

Recognition that these two assumptions are false will require a change in the way you evaluate sections 6 and 7 of this bill. The five elements presented in this document would strengthen our present efforts to increase our competitiveness in the world market. They will develop a system to provide important information to describe the superior product that is presently being produced by U.S. farmers. Therefore, I request that these five elements be considered as the concepts for the development of a section in the bill dealing with intrinsic quality entitled **"Intrinsic Quality Improvement"**.

The Five Elements

The following are the five elements that we recommend be used to develop a section in the "Grain Quality Incentive Act of 1989" entitled **"Intrinsic Quality Improvement"**. This section would replace section VII "Variety Performance Information" and the parts of section VI "Grain

Quality Research & Testing" that deal with intrinsic quality. It must be emphasized that these are elements or concepts to be incorporated into the bill with the objective of developing a system that encourages and enhances intrinsic grain quality. Intrinsic quality is only one factor in the complex quality issue and these elements only deal with intrinsic quality characteristics. The five elements are:

1. Basic research of intrinsic quality should be encouraged and funded at both federal and state level. This research is primarily conducted by the United States Department of Agriculture-Agriculture Research Service (USDA-ARS) and Land Grant Universities.
2. Applied research and testing of intrinsic quality should be encouraged and funded at all levels. There is information presently available from a number of agencies and organizations to characterize the intrinsic quality of present and future varieties. However, additional information, research, testing, and funding are needed to ensure high intrinsic quality.
3. Information on applied research should be in the public domain and widely available for use in the marketplace. This includes the results of testing by the federal, state, and private units. The Federal Extension Service is charged with this mission and should be funded adequately to carry it out.
4. The USDA-ARS in conjunction with the National Agricultural Statistic Service (NASS) should conduct variety surveys and compile information for all major crops, i.e. commercial acreage devoted to a particular variety (wheat varieties surveys were conducted until 1984 funding reductions caused them to be discontinued). This information should be used in combination with the quality surveys to determine the intrinsic quality characteristics for each crop by geography region. Buyers could then be informed by this information on the intrinsic quality of our grain. We believe this information could be used effectively by agencies such as U.S. Wheat Associates.

5. The USDA-ARS in cooperation with the NASS and the Economic Research Service (ERS) should analyze the variety surveys in conjunction with the applied research information to assess the impact of varieties on intrinsic quality. This information should also be used to determine the impact of the environment on intrinsic quality characteristics and the interactions of varieties and the environment. This impact information is a critical step toward future improvements of intrinsic quality.

Environmental effects and Interactions with the Environment

The effects of the environment, and the interaction between varieties and the environment, have been major factors influencing plant improvement for many years. Research in the 60's conducted by S. A. Eberhart and W. A. Russell, Iowa State University, and K. W. Finlay and G. N. Wilkinson in Australia established mathematical models to evaluate the interactions of varieties with the environments for important traits. The importance of interactions can be illustrated by the fact that breeding programs generally conduct trials at five to ten locations and for at least three years before experimental lines are considered for variety release. This data base is required to allow appropriate use of these models and determine the stability of traits across variable environmental conditions.

The focus will be on intrinsic or end use quality characteristics, but the environment has equal or greater impact on traits such as yield. The following are selected examples to demonstrate the impact of this interaction. An experiment conducted in Nebraska in 1988 with 11 varieties grown at five locations found that the environment, varieties, and their interactions all significantly effected end use quality (Grombacher et al. 1988). The following four tables are data on the varieties Len and Marshall from the Department of Cereal Science and Food Technology at North Dakota State University. It is important to know that the variety Len has excellent end use quality, and it is presently the quality check for the milling/baking industry in the spring wheat region. The variety Marshall quality characteristics are generally

considered to be less than Len but acceptable by the industry. We have data on other varieties, but they are similar to those of Len. Lens' grade ranged from 1DNS (Dark Northern Spring) to 5DNS in the nine years at these two locations. Similarly the test weight ranged from 51.6 to 62.5 lb/bu (pounds/bushel) and protein content ranged from 14.1 to 18.7 percent. These ranges found in North Dakota are similar to the ranges that have been observed in South Dakota and other major wheat producing areas. The effect of variety can be seen by comparing the two varieties Len and Marshall. Generally, the variety Len produced higher protein content but the difference ranged from 0 to 0.9 % at Williston and 0 to 2.1 % at Langdon. Len generally had a higher bake absorption but this difference also ranged considerably. These limited examples are presented for two reasons: 1) to demonstrate that the environment can have a dramatic influence on quality characteristics, and 2) to illustrate that the variety is just one important component in a complex system. Due to the variability that exists with different farming techniques, soils, and environments and their interactions, we believe that it would be impossible for the labeler of seed to guarantee either agronomic or quality performance. In fact, presenting this information on the seed label without comparative data from other varieties could very well be misleading. Variety performance information is presently provided to producers through the Cooperative Extension Service. Attached is one page from a North Dakota State University publication which describes Hard Red Spring wheat varieties grown in North Dakota. This publication was 134 pages long in 1989 and covers many crops. Note these are relative comparisons, and they provide the producers with an information base to determine which variety may best fit their operation. Similar publications are available in other states. In addition this information is distributed through producer magazines and during field days. If additional education of producers on the intrinsic quality of varieties is desired, then strengthening the Cooperative Extension Service would probably be the best approach.

The bill presently would require farmers to declare variety at first point of delivery. To be of any value, this would require the use of certified seed and variety preservation throughout the marketing system. However, numerous varieties are available to producers so it would be

difficult and expensive to bin them all separately. Having a large number of varieties available greatly reduces the risk of a wide area crop failure due to biological changes in disease and insect pests. Producers can use differences among varieties to buffer the effects of our variable environment. Thus declaring the variety would do little towards accomplishing the primary objective to improve intrinsic quality.

Declaration and separation of varieties through the marketing channels is based on the premise that the variety name per se is a good indicator of end use quality. The data presented previously describing the influence of the environment and the interaction of the variety and the environment applies to this premise. As an illustration this I will use the data from North Dakota for the variety Len. Obviously, a sample of Len from 1984 at Williston would be inferior in end use quality when compared to the 1984 sample from Langdon or the 1983 sample from Williston. The variety name was of no use in making this interruptive statement on quality because all the data are from a single variety. Thus data from objective tests in combination with the variety name are required to describe intrinsic quality. Obviously the variety can and does have a large effect on quality and agronomic performance. This was illustrated in the study conducted at Nebraska where variety, environment, and their interaction all influenced end use quality characteristics.

The Australian marketing system recognizes that the environment can have a major impact on quality. They use variety declaration coupled with objective testing to determine if a variety grown from a given area is marketed in the prime or standard class. The Australian system presently uses protein, and measurement of sprout damage as their objective tests. Wheat is produced in the U.S. under much more diverse environmental conditions than in Australia; therefore, I'm not sure if the two are comparable. However a combination of variety survey and quality survey would provide the buyer of U.S. wheat valuable information on intrinsic quality. The goal is to provide the buyer with information and improve their ability to obtain the quality that they desire thus improving our competitiveness. However, there will be additional costs associated with implementing any system that enhances quality, and the market must respond with premiums for the enhanced intrinsic quality.

Breeders Emphasis on Intrinsic Quality

I'm not sure where or when the myth "that wheat breeders only breed for yield and ignore intrinsic quality during the process of variety development" originated. But this is truly a myth in that intrinsic quality concerns are a daily reality for today's wheat breeder and that the effort to maintain or improve quality underscores much of what we do. Every wheat breeding program employs somewhat different methodology, however the evaluation of yield and quality are generally conducted simultaneously during the development of varieties. In fact, due to the relatively large amount of seed required for yield testing compared to some quality tests, quality evaluations are often conducted prior to yield testing.

I'm going to use my spring wheat breeding project to illustrate the importance of quality to a breeding program. I'm using my project because of my familiarity with it, and because it represents the typical quality evaluation system used by wheat breeders. Usually lines are tested at 4 to 8 sites in South Dakota for either 2 or 3 years. The data collected from these sites includes yield, maturity, plant height, straw strength, and disease reactions. A sample of grain from each line and each site is simultaneously evaluated for intrinsic quality characteristics. Quality tests provide information on test weight, kernel size distribution, protein content (both whole grain & flour), flour extraction, flour absorption, protein quality (mixing time and tolerance) and, if there is sufficient seed, complete baking. Then, if the line is acceptable after these results are summarized, testing in South Dakota will continue, and the line will be submitted for regional testing. For spring wheat the regional test is conducted at 23 sites throughout the spring wheat, production area. There are similar regional nurseries conducted in the other three regions of the U.S. Essentially the same data as previously described is collected from the regional test with the exception that quality evaluations are conducted on composited samples. A line will be tested in the regional test for 2 or 3 years, and if its performance is still superior, it will be submitted to large scale quality test for two years. In the large scale quality test the quality is evaluated by the milling and baking industry laboratories. I have gone through this example for only one purpose, and that is to

illustrate that intrinsic quality is extremely important to the development of varieties.

Combined with the myth of breeding only for yield is the myth that wheat quality is in some way inferior to what it was in the past, and this perceived deterioration in quality is due to varieties. The following table was developed after the 1985 crop season and is based on data from several test sites in South Dakota. The 1985 crop year was selected because it was a high yielding year and there was some concern about end use quality that year.

Selective Quality Characteristics of Varieties Grown at Sites Throughout the Spring Wheat Production Area of South Dakota in 1985.

Variety	Date Released	Protein Content	Flour Extraction	Peak Time	Flour Absorption
		%	%	min.	%
Marquis	1907	14.9	63.9	2.4	67.3
Chris	1965	16.1	64.8	2.3	68.0
Butte	1977	15.1	66.7	2.5	67.6
James	1979	15.2	69.0	2.6	65.5
Marshall	1982	14.7	69.4	2.3	67.2
Guard	1982	14.9	67.9	3.2	67.7
Stoa	1983	15.7	68.9	3.0	69.2

Hard Red Spring wheat varieties presented in this table do differ in their quality characteristics. Chris has a higher protein content when compared to all other varieties. However Chris is also about 2 to 4 percent less in flour extraction when compared to recently developed varieties. The variety Marquis, which was considered the premier quality wheat for years, also does not fair well for protein content or flour extraction when compared to the more recently developed varieties. Although this is limited data, it does illustrates that variety development has not caused a deteriorations a intrinsic quality. A recent study completed in Kansas evaluated milling and baking traits of 40 Hard Red Winter wheat varieties representing the past 70 years of variety development (Cox et al. 1989). This study was conducted at three

locations in Kansas, for two years, and evaluated six indicators of end-use quality. The changes in varieties through this time period had no effect on flour yield. Mean flour protein content was slightly lower for the 20 varieties released between 1976 and 1988 when compared to the 20 varieties released before 1976. However, this trend was reversed when the varieties released from 1976 to 1988 were compared. Absorption, mixing time, loaf volume, crumb score and overall baking index all increased from 0.1 to 4.6% annually when compared to the variety Turkey. The variety Turkey released in 1874 was used for comparison because it considered the founding father of Hard Red Winter wheat in the U.S. This data from two major wheat producing areas illustrate that any perceived deterioration in intrinsic quality must be caused by factors other than the variety.

Conclusions

Improvements in intrinsic quality testing, identification and buyer information should result in increased buyer confidence and therefore increase our competitiveness in the marketplace. To reap these benefits we must be willing to fund all of the five elements presented in this testimony.

Fortunately, the governmental structure already exists to implement the intent of these five elements. Operational funds infused into the present structure are clearly the least expensive and most efficient method to improve intrinsic quality. These agencies are presently operating with marginal operating funding. It is imperative that new resources, not redistribution of recourse, be allocated to three key areas:

1. Basic and applied research - current funding levels barely allow a status quo situation.
2. Varietal, quality surveys and their analyses are not presently being conducted due the lack of funding. The USDA-ARS, NASS, and ERS will need funds to compile this critical information.
3. Information dissemination by the Federal Extension Service is

also a critical ingredient. New funds need to be directed in a manner that will insure the success of this program.

I'm not qualified to identify any exact funding needs; however this bill will require significant new funding to be successful. I realize that this may be difficult in light of current budget pressure. This is a classic "pay me now" or "pay me later" exercise. If we truly believe that the marketplace needs increased intrinsic quality, these costs will be paid back many times over.

Finally, Mr. Chairman, I appreciate the opportunity to present this information on the behalf of the National Wheat Improvement Committee. The committee is truly interested and concerned with the quality of grain and is willing to work toward all efforts to improve quality.

References

- Cox, T.S., M.D. Shogren, R.G. Sears, T. J. Martin, and L.C. Bolte. 1989. Genetic Improvement in Milling and Baking Quality of Hard Red Winter Wheat Cultivars, 1919 to 1988. *Crop Sci.* 29:626-631.
- Eberhart, S.A. and W.A. Russell. 1966. Stability Parameters for Varieties. *Crop Sci.* 6:36-40.
- Finlay, K.W. and G.N. Wilkinson. 1963. The Analysis of Adaptation in a Plant-breeding Programme. *Australian J. Agr. Res.* 14:742-754.
- Grombacher, A.W., R.A. Graybosch, C.J. Peterson, and P.J. Mattern. 1989. Influence of Genotype and Environment on Protein Quality in Hard Red Winter Wheat. *Agron. Abst.* 83.

Variation in Wheat and Flour

Quality Properties

Cultivar : Len

Location: Langdon, ND

Year	Grade	Test Weight (lb/bu)	Vitreous Kernel Content (%)	Wheat Protein Content ¹ (%)	Baking Absorption ¹ (%)	Loaf Volume (cc)
1980	1DNS	62.1	96	15.3	65.2	850
1981	1NS	60.8	67	14.1	64.1	835
1982	1DNS	62.0	95	14.6	66.6	925
1983	1DNS	58.3	88	14.9	62.6	825
1984	1DNS	61.9	95	15.4	67.9	1025
1985	1NS	60.5	57	14.2	69.1	900
1986	2NS	57.2	57	14.8	68.9	880
1987	1DNS	58.4	87	15.5	65.8	965
1988	1DNS	62.3	98	16.3	73.1	990

¹ 14 % Moisture Basis

Variation in Wheat and Flour

Quality Properties

Cultivar : Len

Location: Williston, ND

Year	Grade	Test Weight (lb/bu)	Vitreous Kernel Content (%)	Wheat Protein Content ¹ (%)	Baking Absorption ¹ (%)	Loaf Volume (cc)
1980	1DNS	58.8	99	16.4	66.7	965
1981	4DNS	54.5	98	16.6	63.8	970 ²
1982	1DNS	60.7	99	16.0	64.7	970 ²
1983	1DNS	60.0	96	17.5	68.9	1025
1984	5DNS	51.6	95	18.0	70.1	990 ²
1985	3DNS	56.9	97	18.0	72.8	1075 ²
1986	1DNS	63.0	96	14.7	71.4	940
1987	1DNS	62.5	95	16.0	67.1	890
1988	1DNS	60.5	98	18.7	70.4	1050

¹ 14 % Moisture Basis² With 10 ppm Potassium Bromate

Variation in Wheat and Flour

Quality Properties

Cultivar : Marshall

Location: Langdon, ND

Year	Grade	Test Weight (lb/bu)	Vitreous Kernel Content (%)	Wheat Protein Content ¹ (%)	Baking Absorption ¹ (%)	Loaf Volume (cc)
1980	1DNS	62.2	90	13.9	61.7	760
1981	1NS	60.8	70	12.0	59.1	650
1982	1DNS	62.7	91	13.0	61.4	780
1983	1DNS	59.8	85	14.1	58.7	800
1984	1DNS	61.8	86	14.0	61.6	870
1985	1NS	60.0	43	12.8	66.8	835
1986	1NS	58.6	60	13.2	63.9	780
1987	2DNS	57.4	90	14.4	61.5	835
1988	1DNS	61.9	98	16.3	69.1	920

¹ 14 % Moisture Basis

Variation in Wheat and Flour

Quality Properties

Cultivar : Marshall

Location: Williston, ND

Year	Grade	Test Weight (lb/bu)	Vitreous Kernel Content (%)	Wheat Protein Content ¹ (%)	Baking Absorption ¹ (%)	Loaf Volume (cc)
1981	4DNS	54.0	89	15.7	59.3	825
1982	1DNS	58.6	99	15.6	63.4	935
1983	1DNS	59.5	92	17.1	63.9	925 ²
1984	5DNS	52.6	89	18.0	65.6	1015 ²
1985	3DNS	56.5	95	18.0	68.2	1075 ²
1986	1DNS	63.9	94	14.1	64.4	880
1987	1DNS	61.3	85	15.6	61.6	855
1988	1DNS	59.9	95	18.4	65.8	1055 ²

¹ 14 % Moisture Basis² With 10 ppm Potassium Bromate

Hard Red Spring Wheat
Variety Descriptions

Variety	Agent or Origin	Year re-leased	Beards	Height	Strength of Straw	Matur-ity	Reaction to disease		Quality factors			Comments
							Stem ₁	Leaf ₂	Test wt.	Wheat protein	Quality rating	
Grandin	ND	1989	yes	s.duf.	strg.	early	R	R	high	avg.	4	
Gus	ND	1989	yes	s.duf.	strg.	m.early	R	R	high	avg.	4	
Amidon	ND	1988	yes	med.	med.	med.	R	R	high	avg.	4	Tol. to common root rot
Len	ND	1979	yes	s.duf.	v.strg.	m.early	R	R	high	avg.	4	
Coteau	ND	1978	yes	med.	m.strg.	med.	R _{4,5}	R	avg.	high	4	Some res. to tan spot*
Waldron	ND	1969	no	med.	strg.	m.early	R _{4,5}	MS	avg.	high	4	Ergot susceptible
Leader	Can.	1982	no	med.	m.strg.	med.	R	MS	high	high	4	Res. sawfly
Cutless	ND	1986	yes	s.duf.	med.	m.early	R ₅	R	high	avg.	3	False bl. chaff
Butte 86	ND	1986	yes	med.	m.strg.	early	R	R	high	avg.	3	
Stoa	ND	1984	yes	med.	m.strg.	m.early	R ₇	R	high	avg.	3	
Alex	ND	1981	no	med.	med.	med.	MR	R	high	avg.	3	Sensitive to Fargo herb.
Minnpro	ND	1989	yes	s.duf.	strg.	m.early	R	R	low	high	3	
Telemark	AgriPro	1986	yes	s.duf.	v.strg.	m.early	R	R	avg.	avg.	3	
Laura	Can.	1986	yes	med.	med.	m.early	R ₄	S	avg.	high	3	
Roblin	Can.	1986	no	med.	med.	early	R ₇	R	low	high	3	
Tammy	U.S.	1985	yes	s.duf.	strg.	late	R ₇	MR	high	avg.	3	
Katepue	Can.	1984	no	med.	med.	m.early	R ₇	MS	avg.	high	3	
Columbus	Can.	1981	no	med.	m.strg.	med.	R	MR	high	high	3	Preharvest seed dormancy
Vance	ND	1989	yes	s.duf.	strg.	med.	R ₅	R	high	low	2	
Fjeld	AgriPro	1988	yes	s.duf.	strg.	m.early	R ₅	R	avg.	low	2	
Prospect	SD	1988	yes	s.duf.	v.strg.	m.early	R ₅	MR	high	avg.	2	
2385	Pion.	1987	yes	s.duf.	v.strg.	early	R ₅	R	low	high	2	
Shield	SD	1987	yes	med.	med.	early	R ₇	R	high	low	2	Susc. to shatter
Nordic	AgriPro	1986	yes	s.duf.	strg.	m.early	R	R	high	low	2	
Celtic	AgriPro	1986	yes	s.duf.	strg.	m.early	R ₄	R	high	low	2	
Norseman	AgriPro	1984	yes	s.duf.	v.strg.	m.early	R	R	low	avg.	2	
Leif	R.H.	1984	yes	s.duf.	m.strg.	med.	R	R	high	avg.	2	
Norak	S.T.	1984	yes	s.duf.	strg.	m.early	R ₅	R	high	low	2	
Guard	SD	1983	yes	s.duf.	strg.	m.early	R ₅	R	high	low	2	Res. to Hessian fly
Wheaton	ND	1983	yes	s.duf.	strg.	m.early	R ₅	R	low	low	2	Low test weight
Marshall	ND	1982	yes	s.duf.	v.strg.	m.early	R ₇	MR	high	low	2	
2369	Pion.	1982	yes	s.duf.	strg.	m.early	R ₇	MR	high	low	2	
Erik	AgriPro	1982	yes	s.duf.	v.strg.	late	R _{4,7}	R	avg.	low	2	Susc. to shatter
Glenman	MT	1984	no	s.duf.	strg.	med.	R _{4,7}	MS	avg.	low	1	Res. sawfly

¹ Refers to agent or developer; U.S. - World Seeds, R.H. - Rohm Haas, NK - Northrup King, AgriPro - AgriPro, W.P.B. - Western Plant Breeders, Pion. - Pioneer Hi-Bred Int., S.T. - Seedtec.

² R = resistant, MR = moderately resistant, M = intermediate, MS = moderately susceptible; S = susceptible; * = occasionally mixed with some susceptible plants; ₅ = MR, _{6,7} = S or MS in artificial induced epidemics.

³ 1. Very poor quality; 2. Poor quality; 3. Average quality; 4. Good quality. (N/A - Quality data not available.) Quality assessed by North Dakota State University Cereal Quality Laboratory.

* During prolonged wet periods, all varieties are susceptible to tan spot.

Seed Count Per Pound*

Grandin	15,000	Fjeld	14,500
Gus	17,000	Prospect	14,500
Amidon	16,500	2385	13,500
Len	14,000	2375	13,500
Butte 86	14,500	Nordic	14,500
Stoa	16,000	Celtic	14,500
Minnpro	14,000	Norseman	16,000
Telemark	16,000	Leif	15,500
Laura	16,000	Norak	15,500
Roblin	15,000	Wheaton	16,000
Columbus	16,000	Marshall	16,500
Vance	15,500	2369	14,000

* Count for grain produced at Fargo in 1989.



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**Statement of AFBF Before the
Senate Agriculture, Nutrition and Forestry Committee's
Subcommittee on Agricultural Research and General Legislation
Regarding the Grain Quality Incentives Act (S. 1977)
Presented by Andrew Whisenhunt, President
Arkansas Farm Bureau Federation and Member of Board of Directors, AFBF**

February 22, 1990

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Senate Agriculture, Nutrition and Forestry Committee's
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Regarding the Grain Quality Incentives Act (S. 1977)
Presented by Andrew Whisenhunt, President
Arkansas Farm Bureau Federation and Member of Board of Directors, AFBF
February 22, 1990

Mr. Chairman and members of the Subcommittee. Thank you for the opportunity to appear before the Subcommittee today to discuss issues regarding grain quality and S. 1977. I am Andrew Whisenhunt, a soybean farmer from Bradley, Arkansas. I am also President of the Arkansas Farm Bureau Federation and a member of the Board of Directors of the American Farm Bureau Federation (AFBF) on whose behalf I am presenting this statement.

AFBF members have been concerned about grain quality for many years. The quality of the commodities we produce and market is an important factor in satisfying our customers in both domestic and international markets. Quality alone however, does not determine if a sale is made. The other primary concern is price. Through the price setting process a buyer will determine the extent to which he is willing to pay for quality.

In general, buyers want the best quality product for their particular needs as they can buy at the lowest prices. Farmers, as sellers of their products want the highest price for the product that they produce. If the price paid for high quality compensates the farmer for his efforts to make that quality available, he will do so. It is in setting the price where the subjective perceptions of quality are translated into meaningful and objective values that permit buyer and seller to strike a deal.

It is important to remember that standards facilitate the marketing process by defining some but not all of the parameters of quality. The method in which standards are constructed may affect the way in which buyers and sellers arrive at a price. Quality, standards and prices therefore are inextricably linked and changes made to the standards on the part of government must be carefully considered so as to avoid biasing the system inherently in favor of buyer or seller.

We commend Senators Daschle and Bond for addressing this issue. The introduction of a grain quality bill has caused many participants in the grain industry including farmers to focus more attention on grain quality. We recognize that this is an area where many positive changes have occurred in recent years, but in certain areas we would like to see more rapid progress. We would emphasize however, that changes to the system must not excessively burden the efficiency of the farmers, processors, and handlers with unworkable

or unreasonable constraints. We are especially aware that as price takers, farmers will ultimately pay the cost of changes that result in lower prices, reduced profitability or loss of competitiveness.

Action to change the market's recognition of grain quality can come about through three methods: legislative requirements, regulatory adjustments and contractual specifications for quality factors. We believe that in general, regulatory changes and contract provisions are preferable means of effecting changes to the standards. However, legislation can facilitate regulatory action and initiate additional actions which will permit us to improve the reputation of our grain quality. Perhaps legislation can stimulate the market to pay for quality factors that customers desire and that farmers and the grain industry are capable of supplying, however it is possible to mandate higher quality standards for which farmers will not be compensated. We must act carefully to avoid such effects.

The U.S. can improve the reputation of our grain through a combination of the following actions: Education of farmers and buyers; research designed to permit U.S. farmers and the grain industry to actually improve the quality of product produced and marketed; and, establishing standards that accurately reflect the level of quality that is available to market. S. 1977 embraces certain good provisions and concepts that would assist us in achieving these goals. Some language will need amendment to better accomplish the worthy objectives that are in the bill. Certain provisions, however, may lead to unacceptable imposition of changes that may not be needed at this time or may even prove to be costly to farmers without actually improving the desirability of our grain. These provisions may need further study to determine their ultimate impact.

We support the following concepts included in S. 1977:

- 1) Designation of a grain quality coordinator in USDA;
- 2) Standardization of unofficial inspections should be pursued by FGIS through assuring that equipment used in grading grain provides uniform and accurate results. The implementation of this goal however, should avoid excessive supervision of ongoing inspections that could lead to time consuming delays at delivery points during critical harvest or delivery periods;
- 3) Study of standards used by other nations can be beneficial. Our policy supports the U.S. attempting to work with other countries to develop a more universal system to compare standards of grain quality. However we would not endorse a commitment by the United States to completely harmonize our system with those used in other nations. A detailed study could provide the industry with modifications which might be considered for purposes of meeting the competition if it is in our interests and capability to do so;
- 4) Assurance of a grain loading plan that is equally fair to both buyer

and seller. This may be in place through the regulatory process prior to enactment of legislation;

5) Research on end-use characteristics of grain is needed as a way of encouraging producers and grain traders to respond to the needs of our customers;

6) Encouragement for objective testing is an important practice that should be emphasized;

7) Development of tests for mycotoxins and pesticide residues is a worthy objective. However, we do not believe that the jurisdiction for establishing tolerances should rest with FGIS or be incorporated into the grain standards;

8) Dissemination of information to farmers regarding end-use performance should be encouraged. However, we are not convinced that the seed label is the appropriate method of making such information available to farmers;

9) Means of facilitating identity preservation can be beneficial;

10) Direction to NASS to study and report on varieties produced in the U.S. regarding the end-use and agronomic performance;

11) Exploration of alternatives to provide financial and technical assistance to farmers and elevators to install, improve and properly operate grain cleaning, storing and drying equipment may be of assistance to the industry.

AFBF is not supportive of modifying Commodity Credit Corporation programs such as price support loans, Farmer-Owned Reserve and Export Enhancement Program to provide grain quality incentives. Such changes could lead to unworkable and ineffective procedures that detract from the objectives of these programs while doing little to actively promote improvements in grain quality.

The provisions of S. 1977 that we do not endorse primarily relate to the provisions on cleanliness, physical properties and criteria for classification, grades and standards. We believe that some changes could be desirable in this area but further research is necessary to determine its feasibility and impact on farmers and the U.S. grain industry. AFBF does not believe that legislation to mandate changes to the standards is appropriate at this time. What we suggest as an alternative is a legislative directive for a comprehensive study conducted by FGIS, with coordination and consultation with the FGIS advisory committee and other USDA agencies, research institutions, farmers and grain industry representatives to evaluate the costs and benefits of changes to our

system such as those proposed in Titles II, III, and V.

Such a comprehensive study will take time but periodic report dates could be included that would require FGIS to submit status reports to Congress. The cost of such an undertaking may necessitate additional appropriations for FGIS to conduct this and other research initiatives included in S. 1977. This study should be designed to answer the following questions:

- 1) If the U.S. grain system is mandated to sell only grain meeting stricter quality standards, will buyers compensate farmers and other seller for the improved quality?
- 2) Would changes to the system be practical to adopt for farmers and grain handlers?
- 3) In what channels will the industry be permitted to market damaged or substandard grain?
- 4) Would matching our competitors standards for cleanliness, purity and damage be feasible considering the types of grain we produce and market?
- 5) How difficult would it be for U.S. grain to meet more stringent standards and what costs would be involved?
- 6) Would some limits on blending practices be acceptable?
- 7) Can we decrease the tolerances for total damage and continue to supply sufficient quantities of grain at reasonable prices?
- 8) Would it be practical to incorporate policies that would encourage more cleaning of grain before it is marketed?

There are other questions that need to be explored and added to this list. Such a detailed analysis will be necessary if changes to the system are made which could have profound implications on the grain prices, and the competitiveness of U.S. agriculture. To mandate significant changes to our system without such analysis would be inadvisable.

Finally, AFBF believes that many of the complaints about quality that have cost us customers resulted from buyers who are inexperienced in purchasing from U.S. sources or who are foreign government buyers unaware of the needs of the ultimate customer. A comprehensive educational program for buyers could go a long way to prevent such incidents of dissatisfaction. FGIS working with FAS, the producer funded promotion programs, and the grain industry could conduct this type of program. We do not have a specific plan to present to you, but we believe that ongoing educational efforts of this kind could improve our reputation and assure that our customers know how to

purchase what they desire. If this is implemented properly, we could significantly decrease the number of complaints about U.S. grain quality.

Finally, I will inform the Subcommittee that the Farm Bureau is appointing an advisory committee of producers to specifically evaluate grain quality issues. This group will include producers of food grains, feed grains and oiseeds. We hope that as they develop further comments on S. 1977 as currently written or on amendments to that bill, that you will continue to consider the comments that we will provide you.

Thank you for the opportunity to appear before the Subcommittee today. Farm Bureau looks forward to continue to work with you on the issue of grain quality. I will be glad to respond to any questions that you may have.

PREPARED STATEMENT OF THE NATIONAL GRADE TRADE COUNCIL

STATEMENT ON S. 1977, THE GRAIN QUALITY INCENTIVES ACT OF 1989

Mr. Chairman and members of the subcommittee:

The National Grain Trade Council appreciates this opportunity to make its views known on S. 1977, "Grain Quality Incentives Act of 1989."

The Council is a national trade association whose policymaking members are grain exchanges, boards of trade, and national grain marketing organizations. The Council has a number of associate members who include grain companies and related businesses.

Basically, S. 1977 addresses four key areas: grain cleanliness, blending, end-use performance of grain, and government quality incentives.

The Council is deeply troubled by the underlying premise of the measure—that Congress should mandate strict parameters for grain standards and handling practices. The bill would make far-reaching changes that would affect all involved in the grain marketing system. We believe changes in such a complex area are better addressed by industry-wide efforts such as the Grain Quality Workshops and through the rulemaking process, as well as by the market itself.

We believe the key issue in S. 1977 is cleanliness. As this issue is debated, we would direct the focus to the economics of "clean grain" for producers and handlers. Cleaning grain will require a huge investment by the handling industry and change handling practices in a way that will result in costs to producers. The subcommittee has received estimates that achieving a 0.5 percent dockage level in wheat will likely cost a farmer at least 5 cents; furthermore, we believe the legislation would impose similar costs on other commodities. The cost to the grain handling industry and producers would be substantial, while the benefits may be illusory.

Let us clearly state that the Council supports improvements in grain quality. We have participated in the Grain Quality Workshops since they were established in 1985. We believe that process, involving all sectors of the grain industry, and working through the regulatory process is the preferable means to address quality issues and concerns, rather than legislation.

The Workshops provide an important forum for addressing quality concerns. Grain quality issues are complex and they merit open debate among knowledgeable people who are the most directly affected. The implications of the changes need to be carefully weighed and discussed. Few lend themselves to quick decisions. We recognize this thoughtful, consensus approach can frustrate the impatient. But we are dealing with a system that works well and in which changes can create a multitude of side-effects that are not always apparent at first blush. We understand the impatience, but believe it is crucial to the long-term credibility of the United States grain marketing system that changes be addressed carefully with due deliberation.

The National Grain Trade Council represents members who earn their living every day marketing and handling grain. They are often dismayed with the negative attention that the quality of U.S. grain receives. Why, they ask, with a system that works so well are there always those who downgrade U.S. products?

The Council believes the United States grain handling and marketing system works exceptionally well and is something the Nation should take pride in. U.S. companies have made a tremendous investment in the Nation's handling system, a system that is second to none in the world. Americans can provide any quality of grain, at any cost, at any time, and on time. The U.S. industry has a very direct self-interest in marketing, exports, and meeting customer needs. It is how we earn our living.

Compared to other nations, the United States is a grain supermarket. We produce and market virtually every type of grain and are in the business to be competitive sellers.

One of the few public yardsticks available to measure how well we are meeting customer needs is the number of foreign complaints received by the Federal Grain Inspection Service. According to FGIS' 1989 Annual Report to Congress, the level of foreign complaints has trended steadily downward over the last 3 years. In 1987, 59 complaints were registered, 35 in 1988, and 25 in 1989.

BENEFITS AND COSTS

We firmly believe that as quality improvements are judged, economic realities must be measured—benefits versus costs. The grain industry is not adverse to change—it is dynamic and quick to react to new opportunities. But, our decisions are made on the economics of every situation. We will support improvements where the identifiable benefits outweigh the cost.

You have heard before that the industry can provide any quality if the buyer specifies it in the contract. In fact, it is routine for some customers to write very specific qualities into their contracts. But, the vast majority do not. We do not believe, in this instance, that public policy should force actions that are uneconomic for that latter class of buyers who dominate the market. We are strongly opposed to making changes, just for the sake of change, in a system we believe works very well. We should define our products and let buyers contract for their respective needs, wants, and desires. To do otherwise is to tell the industry—from the farmer to the exporter—which buyers can and cannot be served in the world marketplace.

As an industry that must make a profit to survive, our members very simply cannot sell something for nothing. If handlers are required to make substantial additional investments in equipment, they must be able to recoup the costs in the marketplace or pass those costs back in the form of lower bids to farmers for their grain. Those who cannot inevitably will go out of business.

It is widely understood that the grain trade operates on razor-thin margins. It is not widely known that most companies have operated at a loss over the past 2 years. The industry is littered with firms which have gone out of business, merged, or consolidated.

Let me share with you an example about margins from one of our members with terminals on the Illinois River. That company typically operates on a margin of 3 cents per bushel for corn and 4 to 5 cents for soybeans on any given day. This margin, which has not changed significantly in the last 15 years, pays for the cost of unloading the grain that comes in, handling it, and reloading it onto barges. This margin is determined by the intense competition present in the area from the other terminals. If the bids are not competitive, the company does not buy anything from farmers. The export market that this company sells to requires No. 2 quality or better. There is no additional money paid for delivering better than No. 2. Legislation mandating such deliveries will be counterproductive in that it would effectively prevent sales to buyers interested in less than premium grain.

There is no fat in handling-margins. Increased costs will immediately translate into lower bids to farmers.

For the goal of increasing quality, this bill would impose very real costs on the grain handling and marketing industry. The bill would require a huge initial capital investment. The U.S. industry simply is not equipped to clean wheat on a large scale. The trade cannot afford to put it in place because it is not justified by the economics. Other organizations have estimated it would cost between \$100,000 and \$500,000 to install cleaning equipment at a country elevator. At an export facility, the cost could reach as much as \$4 million. As we contemplate requiring this type of additional investment we need to remember that country elevators are like any other small, rural business. They often have limited means and the financial requirements envisioned by this bill could be crippling to a small business.

While we can estimate in fairly realistic terms the cost of new equipment, increased operating costs, devalued inventory, and more regulation, it is not possible to put a price tag on the benefits that would be received. For the Council, those benefits seem to be largely illusory.

From our members' experience in the marketplace, we do not see significant demand for higher quality grain. Furthermore, foreign buyers have made it very clear that they would not expect to pay more for this cleaner grain, they feel it should be available at the prevailing market price.

We think it is equally unlikely that such changes would increase the United States' share in world markets. We are skeptical of statements that grain quality has caused losses in market share. It stretches reality to take such statements at face value. One country that has solicited low dockage wheat is Finland; to put its needs in context: Finland's purchases represent the equivalent of 10 bushels in a semitruck load of U.S. wheat. However, under our current grain marketing system, Finland has been able to spell out its specific wants and needs and have them met from U.S. sources—proving that the current system does not stand in the way of any buyer accessing the quality of grain he wants. Should not the law of supply and demand apply to grain quality just as it applies to other products in the marketplace?

Price remains the dominant reason sales are made or lost. Affecting the price are a variety of factors: public policy that distorts markets; logistics or the cost of delivery; availability of supply; quality characteristics; and cleanliness. While quality may be a factor in some instances, the overriding factor is price—being competitive in world markets.

This debate has discussed U.S. quality compared to our major competitors—Canada, Argentina, and Brazil. Canada cleans all of its wheat at a number of points

in its handling system. That cleaning is subsidized by the government and is part of its centralized marketing board. We do not know the price for which Canada sells its grain; by comparison our system is very open and it is easy for all to see.

While Canada does clean its wheat, we have many advantages they do not. We respond to an open and competitive market. We sell all types of grain, not limited classes or varieties. And we have it available in usually ample quantities. We have an infrastructure where we can store grain to meet domestic and world demand year-round; most of our competitors do not have that luxury. Most of these competitors bring their grain to market shortly after harvest and, with their respective government's help, simply sell then at the best price they can get. These are some of the reasons the United States remains a residual supplier.

CLEANLINESS

As we noted at the beginning of our statement, the Council believes the key issue in the Daschle/Bond bill is cleanliness. Without regard to the question of cost versus benefits, probably all involved in grain production, handling, marketing, and processing agree that a higher level of grain cleanliness is desirable. But, there is no consensus on how this goal should be achieved.

In addressing cleanliness, the specific issues that have been raised are the levels of (1) dockage and foreign material in wheat, (2) broken corn and foreign material in corn, (3) broken kernels and foreign material in sorghum, and (4) foreign material in soybeans.

S. 1977 would mandate cleaner grain by directing the Federal Grain Inspection Service (FGIS) to ensure that U.S. exports of No. 3 or better have the cleanliness commonly achieved by competing exporters. The measure would also permit FGIS to prohibit blending low quality grain with high quality grain.

While much is said about the levels of dockage in U.S. wheat, we need to first understand that the main problem is appearance. Dockage does not affect the quality of the actual wheat. We should look at the way wheat is marketed to see how relevant dockage is to the entire equation. Buyers do not pay for dockage that is present in wheat. The percentage of dockage present in wheat is typically deducted from the weight of the grain when settlement is made. It should be noted that the buyer of U.S. wheat can specify any level of dockage in increments of one-tenth of 1 percent and the seller is required to deliver accordingly. The buyer has the freedom to buy according to his or her wants and needs.

Dockage does not pose a problem for a miller. The wheat, no matter what its dockage level, will be cleaned by the miller before further processing. Disposal of the dockage does not represent a problem because the nominal value of the dockage or screenings offsets any disposal problems. Much has been said about the foreign buyers having to pay for the transportation of dockage along with the wheat. (Dockage is a deductible, so the buyer doesn't have to pay for that in the price of the grain.) The implication is that the buyer is paying some huge amount for transporting dockage. Let us look at what is really involved. First, the average difference between dockage content in U.S. wheat shipments and those from, say, Canada, is one-half of 1 percent. The cost of transporting that amount, figuring a typical ocean freight charge of \$25 per ton, is one-third of 1 cent per bushel. As noted earlier, dockage and screenings typically are recovered and sold as millfeed. And if one compares the cost of transporting U.S. wheat with a slightly higher dockage content to the transportation and purchase price difference of the average 1.5 percent higher moisture content of Canadian wheat, the U.S. product offers an obviously better bargain.

Furthermore, we should not forget that dockage does not magically appear, it is not manufactured or added to the grain. Dockage originates on the farm and in fact is reduced as it moves through the United States grain handling system.

While Canada ships lower dockage wheat, the moisture level of Canadian shipments average at least 1.5 percent higher than U.S. Hard Red Winter. Canada's tight control on licensing varieties also has made their production 17 percent less efficient than ours.

For corn, the limit for broken corn and foreign material (BCFM) in No. 3 is 4 percent. While we occasionally hear from foreign customers that U.S. shipments contain a high level of BCFM, this does not seem to be the focus of attention like dockage in wheat. One reason is that with corn destined for animal feed the level of BCFM makes little difference. The majority of what is called BCFM is broken corn kernels which have the same nutritive value as whole corn.

Whether BCFM should be a single grading factor as it is now, or two separate factors, BC and FM, has been the subject of a long-standing debate within the grain

marketing industry. Because of the impetus provided by the Grain Quality Workshop, this issue is now being addressed by an academic evaluation of the costs and benefits associated with redefining the grade factor BCFM.

In addition to deciding how BCFM should be determined, the level of BCFM in corn is an important issue that merits attention. Corn is the most susceptible U.S. grain to breakage in the handling process. Several factors contribute to BCFM levels. The Dent varieties used in the United States are generally seen as more prone to breakage than the Flint varieties used in Argentina. But the major problem is poor drying techniques.

Ironically, this became a problem when new harvesting equipment was introduced in the United States and as our policies encouraged storage rather than marketing. Thirty years ago, most U.S. corn was largely allowed to dry in the field and picked in the ear. With the advent of picker-shellers and combines, producers now harvest grain earlier, often at higher moisture levels. The grain is typically dried on the farm and, too often, it is force-dried at high temperatures over a short time-period. This causes stress cracks in corn and makes it much more susceptible to breakage when it is handled further.

Because of breakage, corn is often cleaned as it is handled by terminals or export facilities. We believe this issue is a good example of a problem that merits further, concerted work by the entire industry. We suspect there is a positive cost/benefit ratio in developing corn less susceptible to breakage. The grain industry would benefit from not having to clean and reclean. And potentially we could ship a better product.

The tasks at hand are to focus attention on the susceptibility of corn to break, encourage development of a device to measure that susceptibility, and then expect the market to provide incentives, through discounts. This may pose some problems—country elevators, for example, cannot bin separately a multitude of quality levels. But if the process improves the breakage susceptibility of corn in an overall sense, everyone would benefit.

As we have pointed out, technological advances in harvesting practices can create quality problems. There are two interesting contrasts to this situation. In China the technology is very rudimentary—the corn production is virtually harvested and handled by hand. This allows them to provide shipments with exceptionally low levels of broken kernels, but the tradeoff involved is not very appealing. In south Texas, the harvesting period for corn provides for natural field-drying of the crop. There, the corn is commonly harvested at 14.5 percent moisture. The crop is harvested with the same type of equipment typical in the Corn Belt and the breakage level is quite low. As a result, corn produced in south Texas seldom requires cleaning.

There has been a public debate over the level of broken kernels and foreign material (BNFM) that should be permitted in sorghum. And this debate will also provide some insight into the workings of the Grain Quality Workshop.

The BNFM limit for No. 2 sorghum is 8 percent. The Grain Sorghum Producers Association has advocated separating the factor BNFM with the limits for No. 2 of 4 percent BN and 2 percent FM, which is a reduction in the total amount.

The National Grain Trade Council has viewed this proposal with skepticism. With the current standards, roughly 90 percent of sorghum exports grade No. 2 or better. The proposal would result in only 45 percent of U.S. sorghum shipments grading No. 2 or better with no foreseeable benefit.

We see little to be gained from such a change, we are unaware of any problems this change would address. In fact, we are aware that our major competitors use the following standards: Argentina, 8 percent (5.0 percent BKN and 3.0 percent FM) for No. 2; and Australia, 13.0 percent for total BKN, FM, and total damage. Japanese users have indicated they prefer sorghum from Australia, not because of cleanliness, but because of protein content. (In fact, Japan does not even measure foreign material at destination.) The typical protein content for U.S. sorghum is about 8.8 percent, Australian sorghum is about 9.9 percent, and Argentine about 8.2 percent.

Therefore, based on this information from end-users, the Council has argued against the sorghum proposal in the Grain Quality Workshop process. And to-date, these arguments have been compelling enough for the Workshops to not endorse such a change.

You have heard in previous testimony that the limit for foreign material in soybeans shipped from the United States should be reduced from 2 percent to 1 percent. In fact, the current FM limit has been blamed for the United States' loss in market share in Japan.

We are skeptical of statements that quality is the reason we have lost soybean market share in Japan or anywhere else. The loss in market share is more directly

related to U.S. farm policy which has discouraged soybean production. U.S. acreage has declined dramatically, exports and world market share have fallen, and the domestic industry has consolidated. In a larger sense, U.S. trade policy has contributed to our loss of market share in Japan. The U.S. embargoes of grain and oilseed exports in the early 1970's led Japan to make significant investments in Brazil to diversify its source of supply. Now Japan, to protect that investment, purchases Brazil's agricultural products.

The U.S. grain standards' limit of 2 percent FM for No. 2 soybeans is often contrasted with our major competitors, Brazil and Argentina, whose limits are 1 percent. However, foreign customers often specify a lower limit in their contract.

The United States can and does ship soybeans with 1 percent maximum FM as per contract terms. But mandating such a change in the standards would result in lower bids to farmers and we doubt the change would improve our competitive position. As the soybean market development cooperator group testified, even though Brazil may be able to provide better quality, they still sell their crop at a discount to the United States. Brazil's past practice has been to simply sell its crop at whatever price level is necessary. Therefore, changing the standards likely would be largely irrelevant and would not provide an economic benefit to U.S. agriculture.

We have heard some producer representatives testify that they support tighter grain standards, more strict requirements for cleanliness, and that they are willing to bear the price adjustment that would go with such changes. The logical question that follows is, if producers are willing to pay the price, why should the grain industry care about these issues?

From past experience we have found that our farmer customers do not always share this willingness to pay the cost for tighter grain standards. We think it is likely that if the provisions of S. 1977 were implemented, a large hue and cry would result. In the meantime, the farm community would unjustly blame the grain trade for the costs resulting from the new legislation.

There also have been statements during the hearings from foreign buyers who say they can buy better quality for the same price from sources other than the United States. That may be true in selected cases, but for most cases this assertion is a gross overstatement of market dynamics. If this is the case in actuality, it would not take the market long to correct the situation on its own. In reality there are many other factors, including the availability of supply.

BLENDING

The legislation would permit FGIS to prohibit blending of some low quality grain. Blending is an integral and important part of the market process and a practice which benefits farmers. Blending begins when a farmer harvests his crop and places it in a farm bin. The simple reason for blending is that the United States does not harvest a uniform quality crop; it comes in all shapes and sizes. The U.S. grain marketing system raises the overall quality of the crop harvested each year, fitting that grain into a rigid grading system with a portion of the crop made marketable by blending.

Not all farmers deliver No. 1 grade grain. Often because of weather, weeds, storage practices, or harvesting conditions beyond his control, a farmer may deliver a crop of low quality grain. Blending allows an elevator to provide a market for most of this grain.

The bill raises the question of whether there should be some parameters on the types of grain that can be blended. We would suggest, however, that this is not an appropriate matter for legislation. We would recommend instead that FGIS should undertake to review the issue and seek public comments. There obviously are some types of grain that should not and cannot now be blended under rules or guidelines issued by the Food and Drug Administration. These would include, for example, grain containing certain amounts of aflatoxin or insect damage.

An alternative would be to reexamine current grade factor limits. The Council would support an evaluation of current grade limits through the Grain Quality Workshops and the rulemaking process to assure the limits are set at appropriate levels.

In conclusion, we urge Congress to be very cautious in attempting to mandate tighter standards for grain cleanliness. We should not restrict what a buyer wishes to purchase. Buyers can specify in their contracts particular requirements they want, particularly in the case of wheat dockage.

Tighter standards will affect different regions of the country differently. Southern States, because of weather, will have more difficulty meeting tighter soybean tolerances and will suffer disproportionately higher discounts. Spring wheat growers, be-

cause of different harvesting techniques, will suffer higher discounts from wheat dockage than other areas.

Fundamentally, we must be aware that these changes will cost money. We doubt these changes will increase grain exports or result in increased market share. Whatever long-term benefits that may accrue, if any, certainly will not be evident when the farmer goes to market his grain after harvest. For this reason, most handlers do not relish being the enforcers of this new policy.

[Appendix to the statement of the National Grain Trade Council follows:]

AVENUES TO IMPROVEMENTS

The Grain Quality Workshops were organized in response to concerns over grain quality that were raised in 1985. In calendar years 1984 and 1985 grain export volume dropped significantly from earlier record tonnage. With this drop in export volume, critics began asserting that a principal reason for the drop was the quality of U.S. grain exports. But government programs at that time had made the United States uncompetitive in world markets. As we became more price competitive under the 1985 farm bill, exports again began to improve and we saw the level of foreign grain quality complaints decline.

The Workshops brought together industry, farm groups, and academics to review quality issues and arrive at consensus recommendations for changes. In June 1986, the group issued a benchmark report, titled "Commitment to Quality," with 6 specific proposals for change and 13 recommendations for further study or review.

The subcommittee has already received a list of the actions recommended by the Workshops and changes that have occurred in the FGIS regulations since that time. The Workshop recommendations, FGIS actions, and the Grain Quality Improvement Act of 1986 have resulted in more changes to the grain standards and procedures over the past 5 years than occurred in the previous 50 years.

The changes that were implemented are not quick-fix types of solutions. The effects of some changes have become readily apparent. But many of the changes have not become fully recognized and their benefits will be appreciated slowly over time.

It is not possible to always gain consensus in a setting like the Workshops with so many diverse groups represented. Most participants have very strong ideas about the types of changes that are necessary. But the strength of the Workshops is its diversity. Ideas may be debated and in the first instance, perhaps, rejected. But if they have merit and broad-based support, they will likely be adopted in some form after they are fully discussed.

The groups involved in the Workshop are all represented on equal footing; each group may have three representatives. Unfortunately, not all groups fully exercise this opportunity. The Workshop process is now undergoing structural change to ensure it operates efficiently and effectively. These changes will ensure that all interest groups share the leadership responsibility for the Workshops.

AMERICAN AGRICULTURE MOVEMENT, INC.,
Washington, DC, February 14, 1990.

The Honorable TOM DASCHLE,
U.S. Senate, Washington, DC.

DEAR SENATOR DASCHLE: The American Agriculture Movement has long been a proponent of higher grain quality standards for the United States. It is our honest belief that we have lost more market share abroad for our products due to poor quality than we have to uncompetitive prices.

The problem of low quality grain must be principally addressed at the warehouse and export levels. Producers, as a whole, have produced quality grain, only to have it tainted by poor handling and/or storage practices. Any legislation passed to address grain quality should not be allowed to be interpreted in any way to penalize producers of quality grain.

To help alleviate the problem AAM would like to bring forth the following proposal. All grain held in CCC inventory which has a grade of No. 4 or less should not be allowed into commercial channels. This inventory should be sold on a bid bases to state departments of fish and wildlife and/or for use in the production of fuel ethanol.

AAM appreciates your concerns on the quality of the grain we produce and your work toward higher quality standards. It is our hope that you will take into consid-

eration our proposal in your endeavor. We stand ready to help you or your staff along these lines.

Sincerely,

DAVID SENTER,
National Director.

NEBRASKA GRAIN SORGHUM PRODUCERS ASSOCIATION,
Lincoln, NE, February 22, 1990.

The Honorable PAT LEAHY,
Chairman, Senate Agriculture Committee, SR-433, Washington, DC.

DEAR SENATOR LEAHY: On behalf of the membership of Nebraska Grain Sorghum Producers Association, we are writing to indicate our support for S. 1977, the Grain Quality Incentives Act of 1989, which is being heard today by the Senate Agriculture Committee.

The general concept of this bill provides a long-overdue step toward improving grain quality and enhancing the reputation of the United States as a reliable supplier of quality grain.

Nebraska Grain Sorghum Producers Association has been working diligently with our national group to tighten the grading standards for U.S. grain sorghum. This effort was, in fact, initiated by our State organization by way of a resolution adopted several years ago. We, as an industry, have been struggling since then to move these proposed changes through the grain quality workshops. The grain trade has, so far, stymied our efforts, as producers, to improve the quality of grain entering the marketing chain.

S. 1977 contains several components, and our letter will not address them individually. We do, however, want to have the name of Nebraska Grain Sorghum Producers Association go on record in support of the general concept of the bill.

We appreciate this opportunity to relay our interest and support, and we offer our assistance if we can help.

Sincerely,

NEBRASKA GRAIN SORGHUM PRODUCERS ASSOCIATION,
BILL RIESE,
President.

SCOLAR GRAIN COMPANY,
Fort Collins, CO, January 18, 1990.

The Honorable THOMAS A. DASCHLE,
S.H. 317, H.S.O.B., Washington, DC.

DEAR SENATOR DASCHLE: I am responsible for the operation of 17 country elevators located in western Nebraska. The elevators are involved in the handling, storing, and merchandising of 140 million bushels of grain annually. I am very concerned about legislation introduced last year entitled "The Grain Quality Incentives Act of 1989" (S. 1977). The bill would add many costly changes to our operation, which I feel are not justified by the false perception that U.S. grain is of poor quality.

In fact, if the end-user customers started requiring grain which is of higher quality, the marketplace would respond quickly and provide it. Also, new inspection techniques and end-user tests are being added as fast as technology will allow. These highly technical issues are being expeditiously and fairly addressed through the regulatory process, where their effectiveness and cost of implementation can be assessed. I ask you to consider the progress being made in this area before considering additional legislation which may not be beneficial or needed.

For example, to handle a "utility grade" of grain, most of our locations would need to build new bins. The cost of doing so cannot be recovered under today's economic conditions. The result would be that some of our elevators would be closed, causing extra hardship and raising transportation costs for the farmers currently served by that elevator. Moreover, the costs for an FGIS submitted sample now run from \$6 up to \$10. Since the average farm truck hauls about 400 bushels, the cost of the submitted sample would be 1¢ to 2¢ per bushel and that expense does not reflect any costs for changing inspection equipment or paying for FGIS supervision. You can see that for our operation, a 1¢ per bushel cost increase reflects back to \$1.4 million that would be passed on to the farmer.

In summary, the bill would introduce unnecessary costs to grain producers and handlers which would be very difficult to recover in today's marketplace. I ask you to carefully consider this legislation and its impact on American agriculture before taking action.

Sincerely,

ALLEN H. SIEVERTSEN,
Regional Operations Manager.

WHEELER BROTHERS GRAIN CO., INC.
Watonga, OK, January 16, 1990.

The Honorable THOMAS DASCHLE,
U.S. Senate, Hart Senate Office Building, Washington, DC.

DEAR SENATOR DASCHLE: I'm writing you to express my doubts concerning the effectiveness of the legislation you introduced last year (S. 1977). My qualifications of serving on the Board of Directors of Oklahoma Grain and Feed Association (consisting of 300-plus grain companies) and being executive vice-president of Wheeler Brothers Grain Company, gives me the opportunity to comment on this issue.

The Oklahoma grain elevator operators are most concerned with the very real potential negative economic impact of "The Grain Quality Incentives Act of 1989" (S. 1977). This bill would require many costly and unnecessary changes to our grain production, handling and marketing system. We believe these changes are based on the false and unjustified perception that U.S. grain is of poor quality. The FACTS concerning U.S. grain quality contained in publication by the Federal Grain Inspection Service do not warrant this perception.

We are especially concerned with the ramifications of this bill upon the wheat industry. We believe the accusations by foreign buyers that U.S. wheat is of inferior quality can be compared to the concept of "letting the fox guard the hen house." We have yet to see any FACTUAL data published that will justify these complaints. FGIS publications have clearly illustrated that the U.S. exporters provide to the foreign buyer the quality specified in the contract. Official Foreign complaints have been few. Therefore, we question whether the real issue is quality or PRICE? It appears the foreign buyer is actually seeking a way to get "something for nothing"? The recent Federal Grain Inspection 1988 Wheat Quality Service publication illustrates quite clearly that our nation's poor quality designation cannot be justified.

For example, 79 percent of the 3,924 samples of the 1988 Hard Red Winter wheat crop taken nationwide graded U.S. No. 2 or better. The average dockage was only 0.8 percent, the average test weight was 61.1, and the average foreign material was only 0.2 percent. In Oklahoma, 52 percent of the samples taken graded U.S. No. 1, and 87 percent graded No. 2 or better.

FGIS also reported in this publication that the average factor results for each class of wheat was well within the maximum allowable grade limits established by the standards. FGIS reported that virtually all (99.7 percent) of the 20 million metric tons of Hard Red Winter wheat inspected for export in 1988 was U.S. No. 2 or better. In fact, the average factor results for U.S. No. 2 lots were well within the limits allowed for the U.S. No. 1 grade, except for the total defects category. Also, the levels of dockage exported in 1988 was less than the average dockage produced in 1988. Quality factors at the export level compared to those at the country level were as good or better in the calendar year 1988. Based on these facts, we find it difficult to understand the foreign complaints of U.S. wheat quality.

Another concern is that this bill will needlessly overhaul our grain inspection system. Our present system is the only one in the world that allows vast amounts of grain to be graded and handled in a short period of time. To change this positive factor would not be in the best interests of the U.S. grain producer.

Unfortunately, we believe many aspects of the bill would create negative economic impacts upon the grain industry, and in particular the grain producer. For example:

(a) The prohibition of blending would force elevator operators to totally refuse to accept poor quality grain from the farmer.

(b) The forcing of FGIS official type inspection at the first point of delivery by the producer would be extremely costly, and would create a multitude of logistic problems not to mention producers having to wait for hours at a time before being able to unload their grain at harvest while waiting for an "official type inspection."

(c) It appears that the "winner" in this bill would be the foreign buyer and the "loser" would be the U.S. grain producer.

Please consider our current marketing systems ability to deliver vast quantities of grain of any specified quality at various price levels. We hope you will consider letting grain standard changes be addressed through the regulatory process and the grain quality workshops rather than through the legislative process.

Sincerely,

MIKE MAHONEY,
Executive Vice-President.

DEMETER INC.,
South Beloit, IL, January 10, 1990.

Hon. THOMAS A. DASCHLE,
U.S. Senate, Washington, DC.

DEAR SENATOR DASCHLE: It has come to my attention that a bill, "The Grain Quality Incentives Act of 1989" (S. 1977), is under consideration of the Senate which would make many changes to handling and marketing of U.S. produced grain.

Under the provisions of this bill it would make it necessary to make sweeping changes in the entire grain industry of the United States. The impact from the producer to the ultimate consumer of the grain would be very costly and in my opinion costly beyond any appreciable return.

To remove the ability to blend grain with grain of higher quality would virtually eliminate a market for some of my customers. Who is going to buy producer grain less than export quality without the ability to blend it away? I can assure you producers will not take kindly to the kind of discounts that would be necessary in order to sell their lower quality grain.

Has anyone estimated the cost of changing inspection equipment and in addition the cost for FGIS to supervise over unofficial inspections?

I'm in favor of improving grain quality to enhance our position in the world market but not without analyzing the impact to the existing marketing structure.

Sincerely,

LLOYD A. SMITH.

AMERICAN SEED TRADE ASSOCIATION, INC.,
Washington, DC, February 20, 1990.

To: Senator Thomas Daschle, Senator Christopher Bond, Senator Bob Kerrey, and Senator Patrick Leahy.

GENTLEMEN: The American Seed Trade Association (ASTA) represents this nation's seed industry. Among our members are virtually all companies which have breeding programs for development of new varieties of soybeans and grain crops. I am writing to you as sponsors of S. 1977. While we appreciate your interest in improving quality of U.S. grain, we are very concerned about and strongly opposed to those provisions of S. 1977 (sections 701-2) which would impose on our industry a scheme of mandatory variety registration and labeling varieties for "intrinsic" properties.

At the mid-winter meeting of our Association, the enclosed "White Paper" concerning S. 1977 was approved unanimously by our Board of Directors. I urge your consideration of it and these additional comments.

Sections 701-2 of S. 1977 appear to be based on a premise contained in the OTA report to the effect that "(f)or most grains, variety is a better indicator of quality than . . . selected tests for quality." ASTA does not agree with that. There is significant historic and current broad-based public research data that clearly and consistently document that environmental conditions cause more deviation in intrinsic grain properties than do differences between a set of varieties grown in any one year. The same variety produced by different farmers or in different geographic areas may vary significantly in agronomic performance and intrinsic grain properties. A wheat variety, for example, may show significant variation from year-to-year due to environmental factors or cultural practices.

Furthermore, farmers in any given area plant many different varieties of grain and soybean crops. For example, USDA statistics show that more than 400 varieties of wheat are grown in the United States. The variety control scheme as suggested in S. 1977, variety labeling and variety identification/separation in the channels of commerce throughout grain trade, is apparently based on the assumption that trade practices both within the seed and grain industries can accommodate this scheme

without great difficulty. This is not the case. Costs would be high and the competitiveness of U.S. agriculture would be at risk.

The proposed registration scheme would eliminate established practices of brand labeling of seed by relegating grain produced from such varieties to "utility" class grain. This would happen because the scheme is designed to publicize those varieties that the government would judge to have superior physical and/or intrinsic qualities and reward those who chose to produce the recommended varieties. This would force plant breeders to breed to meet the registration criteria rather than to improve overall performance characteristics. This would be costly to American agriculture and to the seed industry and would drastically limit options available to American farmers.

The May 1989 Bulletin of the Association of Operative Millers contained these statements:

"The so-called 'wheat quality problem' that is receiving so much publicity is not:

"1. Too many wheat varieties.

"2. Poor quality wheat varieties.

"3. Our lack of ability to properly test and characterize the functional properties of potential new varieties.

"4. Breeding for yield at the expense of quality.

"5. Farmers who are interested only in yield.

"The 'wheat quality problem' is not a quality problem or a breeding problem. It is an economic problem."

ASTA agrees. Our agricultural system has demonstrated the ability to produce and market grain meeting the quality needs of domestic and international consumers. Plant breeders have an enviable record of developing varieties with characteristics for which there is real economic demand. Economic incentives in the marketplace, not regulations, must be the driving force for development and marketing of new varieties of all kinds of crops.

Finally, any system of variety registration and government tests/approvals would delay introduction of the most advanced, highest yielding varieties to American farmers. That is not in the interest of this nation.

ASTA encourages your consideration of our views and the three recommendations contained in our "White Paper" on development and use of information about variety performance.

Sincerely,

WILLIAM T. SCHAPAUGH,
Executive Vice President.

Enclosure.

[The ASTA White Paper concerning the Grain Quality Incentives Act of 1989 follows:]

ASTA WHITE PAPER—CONCERNING THE GRAIN QUALITY INCENTIVES ACT OF 1989

The purpose of S. 1977, Grain Quality Incentives Act of 1989, is to improve the competitive position of U.S. grain in international markets and to facilitate the communication of quality characteristics of grain. This legislation attempts to provide incentives to producers of high quality grain and to improve the quality of farmer-owned and federally owned reserve grain stocks.

The American Seed Trade Association supports the initiative to enhance the competitive position of U.S. grain in international markets. ASTA, however, strongly supports that variety development in the United States continue to be driven by economic incentives, rather than variety registration as proposed in S. 1977. ASTA's position is based on:

1. Significant historic and current broad-based public research data that clearly and consistently show that environmental conditions cause more deviation in intrinsic grain qualities than do differences between a set of varieties grown in any one year.

2. The cost in money and time to breed varieties to "pass federal registration" rather than to meet market demands would be extremely high.

3. Farmers plant more than one variety of any grain crop to provide genetic diversity for reduction of climatic and pest risks.

4. The same variety produced by different farmers or in different geographic areas may vary significantly in agronomic performance and intrinsic grain quality. A wheat variety, for example, may show significant variation from year-to-year due to environmental factors.

Plant breeders respond to the needs of the marketplace. Intrinsic grain quality is only one of the multitude of agronomic traits of importance. New sunflower, wheat, corn, grain sorghum and soybean varieties have been developed and released with enhanced and unique intrinsic properties. As speciality grain markets develop in the future this trend will continue, again emphasizing that public, as well as private, plant breeders respond to the needs of the market.

United States agriculture has the unique ability to produce and market, efficiently and economically, grain varieties meeting the intrinsic quality needs of domestic and international consumers. It must be recognized that intrinsic quality needs of the market are complex and represent a massive, moving target. Such needs can only be met by plant breeders responding to market signals when farmers are able to receive premiums from end-users who are willing to offer financial incentives for grain supplies of specified varieties. Notwithstanding this, however, consistency of intrinsic quality traits from the farm is not a plant breeding or variety control issue and should not be legislated. Industry incentives, not regulations, must be the driving force.

ASTA does encourage the development and use of information about variety performance in the following ways:

1. Greater support should be provided to expand the testing of grain varieties for intrinsic properties and for the dissemination of such information to interested parties. Public funding in this area has been reduced over the last few years.

2. ASTA encourages conducting variety surveys to obtain information on genetic diversity, possible new diseases, and agronomic performance. Lack of USDA funds has caused the discontinuance of such surveys.

3. USDA grain research programs need financial support to enable the development of new technology to measure physical as well as intrinsic grain quality.

Approved by the Board of Directors, American Seed Trade Association, January 1990.

REEDS SEEDS, INC.,

Chillicothe, MO, February 5, 1990.

Re: Senate Bill, S. 1977, Grain Quality Incentives Act of 1989.

DEAR HONORABLE DASCHLE: I would like to object to sections 701, 702, and 703 of title VII, S. 1977, which pertains to variety performance information.

Environmental conditions cause more deviation in intrinsic grain qualities than do differences between a set of varieties grown in any one year. USDA statistics show that more than 400 varieties of wheat are grown in the United States. The variety control scheme as suggested in S. 1977, variety labeling, and variety identification/separation in the assumption that trade practices both within the seed and grain industries can accommodate this scheme without great difficulty. This is not the case. Costs would be high and the competitiveness of U.S. agriculture would be at risk.

Intrinsic quality needs of the market are complex and represents a massive moving target. Industry incentives, not regulations, must be the driving force.

Sincerely,

E.L. REED,

REEDS SEEDS, INC.

PREPARED STATEMENT OF THE INDEPENDENT BAKERS ASSOCIATION

This brief statement represents the written submission of the Independent Bakers Association before the Senate Agriculture Committee hearings on Enhancing Grain Quality in preparation for the 1990 farm bill. The Independent Bakers Association is a national trade association of small and medium sized mostly family owned wholesale bakeries.

The Independent Bakers Association (IBA) applauds the introduction of S. 1977, the Grain Quality Incentives Act (Act) of 1989. The bill responds to the mounting need for Federal grain quality regulation. The bill clearly is designated to improve the export potential of U.S. wheat and as a result the bill will improve grain quality for domestic consumers such as bakers.

In November 1989, IBA circulated copies of the Act to its membership to determine if the bill meets the needs of the U.S. baking industry. The bill does list many specific concerns identified by foreign buyers, however, it fails to recognize or mention many of the problems identified by domestic buyers, namely the American

wheat milling industry and their customers, including the U.S. baking industry. The failure of the Act to address domestic wheat quality problems clearly shows the Act does not recognize that about half of the U.S. wheat market is domestic.

The Act will not be meaningful to bakers until two factors are considered: protein content and baking quality. Without recognition of these intrinsic wheat qualities the Act has only meaning to exporters and millers. IBA urges this committee to adopt language to require USDA to set minimum standards for protein content and baking quality as part of continued research looking toward improved varieties that accomplish these goals.

IBA endorses varietal development in the United States that continues to be driven by economic incentives, rather than variety registration as proposed in S. 1977. The Congressional Office of Technology Assessment (OTA) issued a report this year which stated on pages 16 and 17 "Further, identity of a variety provides more comprehensive quality information than any subset of measured quality characteristics." This is not true, especially for the Hard Winter wheat so critical to the baking industry. Performance characteristics based upon yield, disease, maturity, test weight, protein and virtually all the parameters associated with baking potential measured in quality vary more from year to year based on environmental effects than the range of quality represented by varieties grown in any one particular year.

Research into quantified measures of end-use quality should also be a high priority of legislation included in the 1990 farm bill. U.S. produced wheat requires bakers to add dough strengtheners, dough conditioners and other ingredients and additives to make up for the lack of proper baking potential of U.S. wheat.

The American Bakers Association in testimony before this committee has advocated a number of technical changes to S. 1977. IBA endorses these recommendations.

The Independent Bakers Association welcomes your placing such importance on an issue we have worked on for many years beginning with a joint meeting between IBA and the National Association of Wheat Growers in the summer of 1984. Although our comments are directed toward deficiencies of the Act any changes adopted into the 1990 farm bill on wheat quality should have positive impact for U.S. consumers and bakers. IBA is more than willing to continue to assist this committee on future endeavors involving wheat quality.

Contact: Robert N. Pyle, President, Independent Bakers Association, Post Office Box 3731, Washington, DC 20007.

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FAX 202-337-3809.

PREPARED STATEMENT OF THE MILLERS' NATIONAL FEDERATION

REGARDING S. 1977—THE GRAIN QUALITY INCENTIVES ACT OF 1989

The Millers' National Federation (MNF) is the national association of the wheat flour milling industry. Membership is comprised of 43 companies operating 147 mills. Their daily domestic production capacity of 113 million pounds of flour represents approximately 90 percent of the total U.S. milling capacity.

The MNF feels the emphasis on grain quality is appropriate and timely and has worked for improvement in the wheat standards for a number of years, particularly in the area of insect infestation. However, S. 1977 appears to be largely targeted toward the export market. While the needs of most foreign customers are little different than those of domestic millers, U.S. millers remain the largest single customer of U.S. wheat. They purchase one-third of the total crop every year and keep the added value in the country. The Federation therefore encourages equal consideration of the domestic market in any quality initiative.

This industry supports strongly portions of S. 1977, including improved standardization and uniformity and accelerated research and development efforts aimed at enhancing quality. The former efforts are necessary so that each link in the marketing chain understands consistently the descriptions used to specify grain quality. Only slightly less important is the uniformity aspect. The marketing chain has the capability of adjusting its processes to the characteristics of each new crop. However, once those adjustments have been made, uniformity of subsequent shipments is important in order to maximize the efficiency of long-term production runs of today's manufactured grain products. Consistent and precise quality descriptions will facilitate grain buyers in sourcing similar grain, purchase after purchase.

Research into quantifiable measures of end-use quality should also be a high priority. Such measures can be utilized by breeders as they tailor their quest for varieties which offer both the field performance important to the producer and the qual-

ity characteristics desired by end-product manufacturers. The Federation's efforts to develop a Soft Wheat Quality Council, for example, could take advantage of such research as millers utilize their position in the middle of the wheat chain to communicate quality information between the bakers and breeders/producers.

While we do not support legislating the grading factors and grade limits within those factors, instructive language encouraging the Department to develop standards that correlate with the grain's inherent value would be useful.

For example, the USDA's Federal Grain Inspection Service currently has for wheat an action level of 32 insect-damaged kernels in a 100-gram sample which would cause the wheat to be graded Sample grade (the lowest). The Food and Drug Administration utilizes this same level to denote wheat that is unfit for human consumption. The FDA has another regulation that denotes flour with 75 or more insect fragments in a 100-gram sample unfit for human consumption. Yet the experience of millers is that a wheat sample with one insect-damaged kernel will have, on average, 20 insect fragments once milled into flour, so the 75-fragment defect action level maximum could be reached with only four insect-damaged kernels in the sample.

Stated another way, it is possible for a miller unknowingly to purchase wheat graded by FGIS to be U.S. No. 1 and mill it into flour that is subject to seizure by the FDA for unwholesomeness. This is a clear example of a standard that does not communicate useful, meaningful information to the end-user.

Another example illustrative of this type of shortcoming is the absence of a wheat grading standard for sprout damage. While sprout-damaged kernels currently are counted as part of total damage, the allowable levels are far too lenient to provide buyers, especially millers, with meaningful information on the baking performance of the wheat. U.S. grade No. 2 wheat is allowed to contain up to 4 percent total damaged kernels. Yet many wheat foods cannot tolerate any level of flour milled from sprouted wheat.

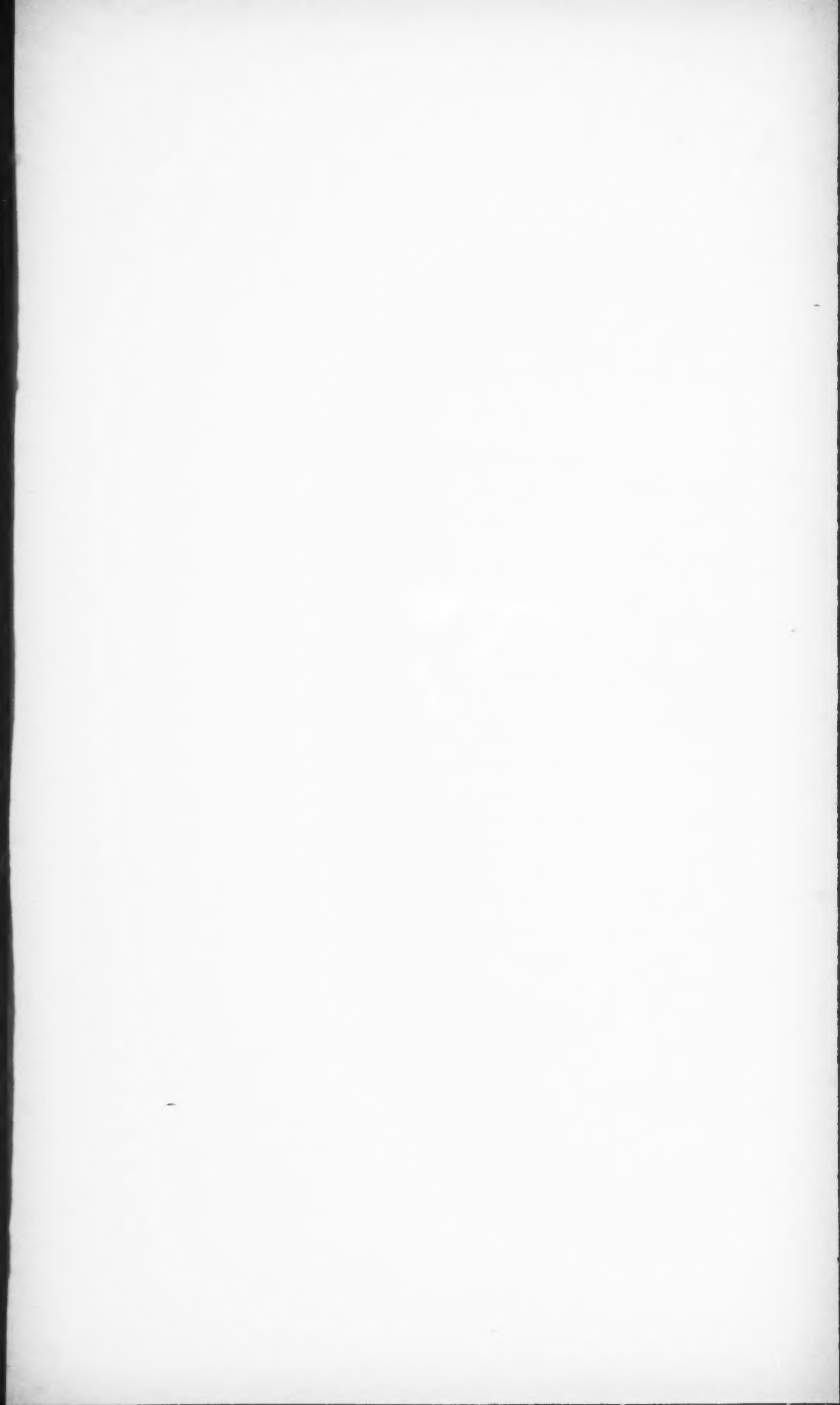
They include soups thickened with flour, pie crusts and fried pies, and batters and breadings for fried foods. Millers may use sprouted wheat for many flours, but must keep this wheat separate and mill it separately. The establishment of a sprout-damaged kernel factor would provide this valuable information in advance, allowing the damaged wheat to be used successfully without ruining the baking performance of other flour.

Another concept addressed in S. 1977 is that of variety identification. We believe that in advancing toward more informative and user-oriented standards, policy and regulations should allow the listing on the official inspection certificate information on the crop-year, area of production and variety. True end-use quality varies significantly with each of these three. This information is already being utilized by FGIS in the interim classing procedure. At the very least, FGIS should make information on crop-year, area of production and variety available as an optional service available upon request.

In summary, the Millers' National Federation believes there are portions of the grain standards that are not meaningful from an end-user perspective, and other useful information is not available at all. Currently FGIS is pursuing new and improved technologies for some intrinsic value testing, such as protein, oil and starch content of grains and oilseeds. These types of instrumentation advances are exciting and FGIS is to be commended. However there are some very good indicators of end-use quality, such as the insect-damaged kernel and sprout-damaged kernel issues addressed previously, that are not being dealt with despite the fact that the necessary change requires no new technologies—only changes in policy.

Finally, the Federation encourages the Congress in the strongest possible terms to support the absolutely vital research projects carried out at the regional Wheat Quality Laboratories. Whether developing new methods of insect control or new, sprout-resistant varieties, the laboratories are conducting the essential research that will allow the U.S. grain industry to solve grain quality problems.

The Millers' National Federation appreciates the opportunity to submit this statement and any consideration that may be afforded our position.



PREPARATION FOR THE 1990 FARM BILL

Noxious Weeds

WEDNESDAY, MARCH 28, 1990

U.S. SENATE, SUBCOMMITTEE ON AGRICULTURAL RE-
SEARCH AND GENERAL LEGISLATION OF THE COMMITTEE
ON AGRICULTURE, NUTRITION, AND FORESTRY,

Washington, DC.

The subcommittee met, pursuant to notice, at 3 p.m., in room SR-332, Russell Senate Office Building, Hon. Thomas A. Daschle (chairman of the subcommittee) presiding.

Present or submitting a statement: Senator Daschle.

STATEMENT OF HON. THOMAS A. DASCHLE, A U.S. SENATOR FROM SOUTH DAKOTA

Senator DASCHLE. The hearing will come to order.

Today, the subcommittee will examine the programs and problems that are associated with control of noxious weeds. Noxious weeds are a nationwide problem and threaten agriculture and natural ecosystems. The Federal Noxious Weed Act of 1974 was designed to prevent the further spread and introduction of noxious weeds in the United States. However, as currently written and interpreted, this law provides only partial protection from the invasion and spread of designated species, and new noxious weeds are still entering the United States at an alarming rate.

I will be introducing legislation that is designed to correct the problem that is associated with the current noxious weeds law. This legislation will broaden the scope and enforcement authority of the current law so that noxious weed problems can be contained.

Senators Baucus and Conrad have recognized that noxious weeds are a devastating problem and have introduced legislation to improve the control of noxious weeds as well. Hopefully, a package of legislation can be put together that will address all of the problems associated as we see them.

Many people may not realize the serious nature of weed problems in our country. Greater emphasis is often placed on controlling insect and disease outbreaks because farmers and landowners see the immediate impact of these organisms as they pertain to the crops on their land. However, weeds can cause serious long-term economic damage to cropland in natural ecosystems. Many landowners in the Great Plains, for example, have been forced to abandon land because it was so seriously infested with noxious weeds. Natural ecosystems are threatened by the introduction and rapid

spread of noxious weeds. When these natural areas are infested, they no longer benefit either wildlife or man.

Conservation reserve acreage is also becoming infested with noxious weeds. Many landowners have refused to control weeds on their CRP land. Uncontrolled weeds are causing aggravation for neighboring landowners and are perpetuating long-term weed problems in CRP-related areas. The legislation I am introducing will address failure to control weeds on CRP. Controlling these weeds will require landowner cooperation with Federal, State, and local officials.

Greater emphasis is needed on the development of ecological and economically viable methods to control these weeds. Along with better control methods, there is a need for USDA to make a noxious weed control and prevention program a priority. In order to accomplish these goals, cooperation is needed between Federal, State, and private organizations to develop systems and methods to improve control of noxious weeds.

This hearing is going to enable us, hopefully, to focus attention on this issue and give us a viewpoint on how to improve the current law as a part of the farm bill. Therefore, I am pleased to call before the subcommittee the first panel, and I will do so at this time.

The first panel is comprised of James Glosser, the Director of the Animal and Plant Health Inspection Service, USDA; Dr. Howard Singletary, the director of the Plant Industry Division of the North Carolina Department of Agriculture; and Mr. Don Schmitz, the aquatic biologist, the State of Florida's Department of Natural Resources.

Gentlemen, we are pleased you are with us this afternoon, and we invite you to come to the desk. I want you to pretend that every one of these chairs is just lined with Senators because, in a sense, it is the case. Your testimony will be made part of the record, and I guarantee you we will be talking a lot about this in future weeks.

I appreciate your willingness to come as far as you have and invite you to proceed as you see fit.

Your entire prepared text will be made part of the record. If you could summarize your statement in 3 or 4 minutes, that would be terrific.

Dr. Glosser, let us begin with you.

STATEMENT OF JAMES W. GLOSSER, ADMINISTRATOR, ANIMAL AND PLANT HEALTH INSPECTION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, DC

Dr. GLOSSER. Thank you, Mr. Chairman and members of the committee. I am pleased to be here today to discuss some of the complex issues surrounding control of noxious weeds.

BACKGROUND

As you know, Mr. Chairman, noxious weeds have the potential to infest virtually all susceptible land and water in the United States. This vast land and water base is the source of America's food and fiber, and provides economic stability to a large segment of the Nation's work force. It is well documented that many weed species

have extensive and costly impacts on human health, safety, commerce, and recreation. Noxious weeds can adversely affect food production, wilderness values, wildlife habitat, visual quality, forage production, reforestation, recreational opportunities, and land values.

USDA ACTIVITIES

Programs of the U.S. Department of Agriculture (USDA) influence the use and management of over 1 billion acres of non-Federal range, crop, forest, pasture, and other lands, and the USDA manages more than 190 million acres of publicly owned range and forest lands. Many USDA agencies play a role in noxious weed management. To better coordinate the activities of the Department in implementing effective noxious weed management programs, the USDA developed a noxious weed policy, which was published as a Departmental Regulation on January 19, 1990. This policy was designed to emphasize an integrated pest management approach to noxious weeds, and it stresses "management" over "control" to give USDA the greatest flexibility in noxious weed activities. Finally, the policy provides USDA leadership in promoting cooperation and coordination among other Federal and State agencies and county weed control districts, private organizations, and individuals who are interested in planning and implementing integrated pest management approaches to noxious weeds.

MANY AGENCIES WITHIN THE DEPARTMENT THAT ARE INVOLVED IN NOXIOUS WEED MANAGEMENT

There are many agencies within the Department that are involved in noxious weed management. These include the Forest Service, Agricultural Stabilization and Conservation Service, the Soil Conservation Service, Agricultural Research Service, Extension Service, Cooperative State Research Service, and Agricultural Marketing Service. I have outlined the activities of these agencies in my prepared remarks and would like to submit them for the record.

In the interest of time, I will focus on the activities of APHIS, of which I am the Administrator.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

The Animal and Plant Health Inspection Service (APHIS) administers the Federal Noxious Weed Act (FNWA) in an attempt to exclude noxious weeds from the United States and control damage to agriculture from certain noxious weeds in the United States.

DEFINITION

Because the law restricts the definition to noxious weeds that are "new to or not widely prevalent in the United States," we focus our activities on species that are not widespread, but that are or could cause serious damage to agricultural production if allowed to spread. Current APHIS control efforts are aimed at hydrilla, common crupina, Orobanche, red rice, and goatsrue. In addition, we are using biological control techniques to combat damaging weeds such as leafy spurge and diffuse and spotted knapweeds. In

fact, ARS has recently identified additional beneficial insects that we may be able to use on leafy spurge in the future.

APHIS COMPLEMENTS CONTROL EFFORTS AND COOPERATIVE PROGRAMS WITH EXCLUSION ACTIVITIES TO PREVENT THE ENTRY OF NEW SPECIES OF NOXIOUS WEEDS

APHIS complements control efforts and cooperative programs with exclusion activities to prevent the entry of new species of noxious weeds. The FNWA requires that USDA promulgate regulations listing noxious weeds that are prohibited entry into the United States. For the 87 species that are listed, APHIS inspects incoming shipments of plants, seeds, and other articles to ensure that they do not contain any listed species of noxious weeds. In addition to excluding listed species, the FNWA authorizes us to take emergency action to prevent any species of noxious weeds from entering or being disseminated in the United States.

FNWA PROHIBITS ANY PERSON FROM KNOWINGLY MOVING INTERSTATE ANY NOXIOUS WEED EXCEPT UNDER A PERMIT FROM THE SECRETARY AND IN ACCORDANCE WITH PRESCRIBED CONDITIONS

Finally, the FNWA prohibits any person from knowingly moving interstate any noxious weed except under a permit from the Secretary and in accordance with prescribed conditions. Unfortunately, the legislative history accompanying the FNWA indicates that Congress intended that the prohibition on interstate movement is only to apply to movements from quarantined areas, and a quarantine would only be imposed with respect to an area in which control or eradication measures are taken by the Secretary in cooperation with a State or political subdivision, farmers' associations, or similar organizations or individuals.

ISSUES

Probably the greatest problem confronting us in noxious weed control is identifying what constitutes a noxious weed and how to establish priorities for control efforts. Although we recognize the definition of noxious weeds under the FNWA may be too restrictive, we do not have the resources or technology to expand that definition to include every species of weed that is capable of damaging agriculture or other natural resources. It would be impractical to try. In addition, there is often disagreement, even among specialists, over what constitutes a noxious weed. What is considered a noxious weed in one area may be sold as an ornamental in another part of the country.

The key to successfully directing control efforts will be to establish criteria for identifying the weeds, including weeds listed under the FNWA, that cause the most damage and for which adequate control technology is available. The traditional approach to weed management has employed chemical methods. In an age of increasing awareness about environmental issues and concerns about ground water contamination, it is necessary to emphasize alternative methods such as biological control. Biological techniques are usually self-sustaining after the biological agents have become established; thus they are often less costly than chemical or mechani-

cal methods that have to be reapplied periodically. In addition, biological control methods tend to be specific, affecting only the target weed, while chemicals are more likely to affect nontarget species. The key in any biological control project is to have one or more beneficial agents that are available in sufficient numbers to attack the target weed at various stages of plant development in order to impair its health, reproductive ability, and overall population growth.

While we believe biological control is an appropriate approach to weed problems, we caution that biological control is not a "magic bullet." There is no single biological control method that will work against a number of problems, and effective methods take time to develop. We think the time will be well spent. In the meantime, successful weed control will require a combination of effective biological control, herbicides, cultural controls, sound land management practices, and a high level of public awareness.

We also believe improvements can be made in our exclusion efforts. For example, we believe it is unnecessarily cumbersome to have to list the species of weeds that are prohibited entry into the United States. We do not list by regulation all species of pests or diseases that we wish to exclude from the United States, and we do not believe there should be a separate standard for noxious weeds.

That concludes my prepared statement.

[The prepared statement of Dr. Glosser and letter dated April 17, 1990, from Larry B. Slagle, Associate Administrator, for James W. Glosser to Hon. Tom Daschle appear at the conclusion of the hearing.]

Senator DASCHLE. Thank you, Dr. Glosser. You had that timed pretty well.

I may have to abbreviate some of the questions I had for our witnesses, but I do have a couple. And I would ask one now, and I may ask some more in a moment.

Why doesn't your advisory group meet?

Dr. GLOSSER. The advisory group hasn't met in recent years, not since I have been with the Department. 1981 is the last time. It is a long time.

Senator DASCHLE. So you have confirmed that it doesn't. But why doesn't it?

Dr. GLOSSER. There has not been the focus, I guess, to be very candid with you, with the small number of noxious weeds that we deal with.

Senator DASCHLE. How long have you had the job?

Dr. GLOSSER. I have had the job as the Administrator for 2 years.

Senator DASCHLE. So you haven't seen fit to focus on it, either.

Dr. GLOSSER. I have recognized the need for noxious weed control, but budgetary limitations and the limitations that I have outlined in our testimony have been overriding factors.

Senator DASCHLE. Don't you think it is important we start meeting on a more regular basis?

Dr. GLOSSER. I believe it is important that we have a Federal-State-industry cooperative agricultural effort to focus on noxious weeds. I certainly do.

Senator DASCHLE. Do you have plans to do that?

Dr. GLOSSER. I don't believe that a Federal advisory committee is necessarily the only forum in which this can be done.

Senator DASCHLE. No, I am not suggesting that. I guess I would only ask if you have only met once or twice since 1981, if we are really serious about this, somebody might have seen fit to hold a meeting.

Dr. GLOSSER. Yes, I understand your concern, Senator.

Senator DASCHLE. Dr. Singletary.

STATEMENT OF HOWARD M. SINGLETARY, DIRECTOR, PLANT INDUSTRY DIVISION, NORTH CAROLINA DEPARTMENT OF AGRICULTURE, RALEIGH, NC, AND REPRESENTING THE WEED SCIENCE SOCIETY OF AMERICA

Dr. SINGLETARY. Thank you, Mr. Chairman. In keeping with your comments about being brief, I am just going to summarize several points and move through my prepared statement.

SIGNIFICANT IMPACT OF NOXIOUS WEEDS TO THE UNITED STATES AND DIRECTLY TO NORTH CAROLINA

I would like to thank you for the opportunity to appear before you and testify about the significant impact of noxious weeds to the United States and directly to North Carolina. My comments represent the views of the State of North Carolina and also the Weed Science Society of America, of which I am a member and currently serve as Chairman of the Federal Noxious Weed Law Committee. The Weed Science Society is composed of weed scientists in the academic community, private industry, regulatory and public service industry and private practitioners with a membership of approximately 2,300 members.

ECONOMIC CONSEQUENCES OF CROP LOSSES DUE TO THE PRESENCE OF WEEDS IS STAGGERING

The economic consequences of crop losses due to the presence of weeds is staggering. It has been estimated that 10 to 15 percent of the total market value of farm and forest products in the United States is lost to weeds. This translates into agricultural losses around \$10 billion per year. It is estimated that agricultural producers in the United States now spend about \$3.6 billion annually on chemical weed control and \$2.6 billion for cultural, ecological, and biological methods of control.

MOST OF THE SERIOUS WEED PROBLEMS IN THE UNITED STATES ARE OF FOREIGN ORIGIN

Most of the serious weed problems in the United States are of foreign origin. Unfortunately, in the past, the potential for serious weed problems has been recognized only after the plants have escaped and infested areas are often beyond the scope of eradication. Congress recognized the importance of foreign noxious weed introductions and passed the Federal Noxious Weed Act of 1974 which was signed into law by the President on January 4, 1975.

THE ACT PROVIDES APHIS WITH A MANDATE

The act provides the Animal and Plant Health Inspection Service with the mandate to prevent the entry of foreign noxious weeds into the United States. Funding, however, has only been appropriated only in 5 of the past 15 years. In addition, funding has been directed toward specific weed problems rather than general funding that would allow for the full implementation of the act.

INTERPRETATION OF THE FEDERAL NOXIOUS WEED LAW ITSELF HAS LED TO VARIOUS PROBLEMS

Since its inception, interpretation of the Federal noxious weed law itself has led to various problems. This fact is shown clearly in two examples in North Carolina, and I will cite those for you.

ITCHGRASS

We had an infestation of itchgrass identified in North Carolina in 1984. Over a 4-year period, we were able to eliminate this weed in one county in our State at a cost of approximately \$250,000. It is a federally listed species present in nine Southern States, but the closest infestation in North Carolina prior to that limited introduction was several hundred miles away. We feel we need protection against the introduction of that weed again.

SERRATED TUSSOCK

A second weed problem that surfaced in the last 2 years has been identified with the misinterpretation of the Federal Noxious Weed Act. The introduction of serrated tussock, which is a pasture pest identified first in South America which causes great problems in New Zealand and Australia. This weed was introduced into the country through infested tall fescue seed in 1988. Had it not been for congressional intervention, this seed would not have been eventually stopped. It was a congressional inquiry that got APHIS to seek an additional opinion from the Office of General Counsel to move toward stopping this. In the meantime, we had about 15,000 pounds of infested lots of this seed distributed in our State, and I am afraid that that is one that will come home to roost that we will have to deal with in about 3 years in North Carolina.

From a national perspective, the Weed Science Society of America considers the adoption of the Federal noxious weed law to be a milestone. It is, however, the consensus of the society that several recommendations need to be considered that would enhance the effectiveness of the act and allow for full implementation.

Those suggestions I won't go over item by item, Mr. Chairman. They are included in the full text of my statement, and I will summarize.

THE SOCIETY ALSO ENDORSES THE FEDERAL UNDESIRABLE PLANT MANAGEMENT ACT

In addition, the society also endorses the Federal Undesirable Plant Management Act which has been introduced or is being introduced. I think that is what you are referencing, Senator. This proposed legislation provides the mechanism for cooperative efforts

among Federal and State agencies in managing weed problems on adjacent Federal and State lands. We would also urge that full funding be provided to implement a full range of weed management activities as authorized by the current Federal Noxious Weed Act.

LEGISLATION AND FUNDING

Now more than ever, there is an increased potential for the introduction and spread of noxious weeds into this country. I believe that it is vitally important that these amendments that I have mentioned as being summarized in my testimony be included in the Federal noxious weed law. Further, I would like to encourage that funding be included to fully implement the law as amended. Without these necessary changes, the ability to develop proactive strategies to address noxious weeds in the United States will falter. I would hope that you, as Members of Congress, will carefully review these issues and take appropriate action.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Singletary appears at the conclusion of the hearing.]

Senator DASCHLE. Thank you, Dr. Singletary.

Do you dispute any of what he said, Dr. Glosser?

Dr. GLOSSER. No, I don't. Those are all very valid points, and it clearly has been a matter of lack of funding to broaden the scope of our activities under the Noxious Weed Act. It has been very limited, as I mentioned, to six programs.

Senator DASCHLE. You have been at it now for a couple years, so you really are not a newcomer at it. Have you seen fit since you have been in to address this? In other words, is there money in this year's budget to address noxious weeds?

Dr. GLOSSER. Not adequately in my judgment, no. We have had our FY 1991 budget hearings.

Senator DASCHLE. What is the figure, do you know?

Dr. SINGLETARY. \$750,000.

Dr. GLOSSER. \$842,000 in FY 90.

Senator DASCHLE. \$842,000?

Dr. GLOSSER. Yes. That has been the annual appropriation over the years that I have been involved with the Agency.

Senator DASCHLE. Why would it take congressional action to get the serrated tussock reviewed by your office?

Dr. GLOSSER. Well, certainly there was concern prior to that inquiry. Concerns were raised within our port inspection program, but there was confusion between the Federal Seed Act and the Noxious Weed Act. I asked for an OGC opinion as to which law superseded which and received that opinion about the time the congressional query came to the Agency. This caused confusion among our port inspectors and affected enforcement of the statute.

Senator DASCHLE. So in other words, they were wrong. The interpretation—

Dr. GLOSSER. The interpretation was wrong as it related to products (seeds) containing noxious weed seeds inspected at the ports. Indeed, it was. We were told by counsel that the Noxious Weed

Act, section 6(a), I believe, superseded the exclusion under section 12 of the Federal Seed Act.

Dr. SINGLETARY. Section 12.

Dr. GLOSSER. Section 12.

Senator DASCHLE. So far you have told me that, number one, you have not met since 1981, and you think that ought to be changed; that the budget has been grossly inadequate to meet our needs; and, third, there have been some erroneous decisions made with regard to the importation of noxious weeds that have created some real problems.

Frankly, I am applaud your candor. That is more than we get sometimes in this room. But I am less than optimistic that you have the determination to make some fundamental changes in the direction we are taking with regard to noxious weeds. Is that pessimism well founded?

Dr. GLOSSER. No, sir, I don't believe it is. Not with me personally or with the Agency——

Senator DASCHLE. What can you do to convince me in 30 or 40 seconds that things are going to change?

Dr. GLOSSER. We will work with the industry, the State, and other Federal Government agencies, and would certainly be looking forward to responding to the laws, the proposed legislation, so that we can address the issue in a holistic manner rather than in the very limited scope that we have done in the past. As Howard said, we have been funded 5 years out of 15.

Senator DASCHLE. Did you go into the budget and actually fight for more money?

Dr. GLOSSER. I can't remember what my departmental—I would like to provide for the record what the Agency requested.

[The information of Dr. Glosser was subsequently provided and follows:]

For fiscal year 1991, the Department requested an appropriation of \$585,000 for noxious weed activities. This amount was subsequently raised to \$589,000, which is the request that was submitted as part of the President's budget. The request is about \$300,000 less than the fiscal year 1990 appropriation of \$897,000 because APHIS does not plan to be involved in control of common crupina in Washington, Idaho, and Oregon during fiscal year 1991. The technology and methods are now available for the States to handle local infestations of this weed. We plan to use part of the requested funds to conduct a delimiting survey to determine the extent of certain weed problems in the United States.

Senator DASCHLE. Thank you.

Mr. Schmitz.

STATEMENT OF DON C. SCHMITZ, AQUATIC BIOLOGIST, FLORIDA DEPARTMENT OF NATURAL RESOURCES, TALLAHASSEE, FL

Mr. SCHMITZ. Senator Daschle and members of the subcommittee: Thank you for the opportunity to appear before you today to make a statement concerning the State of Florida's Department of Natural Resources view on the Federal Noxious Weed Act of 1974.

VERY ACTIVE IN PREVENTING THE INTRODUCTION OF NEW EXOTIC
AQUATIC PLANTS INTO FLORIDA AND MANAGING THE ONES THAT
HAVE BEEN INTRODUCED INTO ITS WATERWAYS AND WETLANDS

Since 1973, the Florida Department of Natural Resources has been very active in preventing the introduction of new exotic aquatic plants into Florida and managing the ones that have been introduced into its waterways and wetlands. However, there are more than 900 species of exotic plants that are now naturalized in Florida. Almost one-half of these exotic plants were imported into Florida as ornamentals or sources of food, timber, fiber, forage, or as contaminants of agricultural practices. They are now multiplying and spreading without control into environmentally sensitive areas. Since 1980, more than \$112 million has been spent in Florida to combat these "biological pollutants."

NO FEDERAL NOXIOUS WEEDS SHOULD BE ALLOWED TO BE SHIPPED
INTERSTATE FOR COMMERCIAL BUSINESS PURPOSES

The Federal Noxious Weed Act was passed by Congress in 1974 to protect the United States from invasion by foreign weeds. A number of species were designated as Federal noxious weeds to prevent their dissemination into the United States because they have the potential to injure agriculture interests and wildlife resources. Of the 93 Federal noxious weed species, 51 are known or reported to be in the United States. Presently, a number of these Federal noxious weeds species are being sold in other States for ornamental use or vegetable consumption. The Federal noxious weeds African elodea (*Lagarosiphon major*), purple waterhyacinth (*Eichhornia azurea*), and water spinach (*Impomoea aquatica*) are good examples of plants that can be purchased in aquarium wholesale and retail magazines or seed catalogs. Although the State of Florida has been effective in preventing the Florida aquatic plant businesses from introducing new exotic plants into Florida's waterways and wetlands, there is no way we can regulate plant species that are grown and shipped from another State into Florida through the U.S. mail or commercial freight carrier. No Federal noxious weeds should be allowed to be shipped interstate for commercial business purposes. It makes no economic sense spending Federal dollars to prevent Federal noxious weeds from entering into the United States, but then ignoring them once they have been either introduced accidentally or intentionally.

DEFINITION OF A FEDERAL NOXIOUS WEED

The major reason the Federal Noxious Weed Act of 1974 was introduced as a bill was because of the rapid spread of the submersed aquatic weed hydrilla (*Hydrilla verticillata*). Hydrilla was subsequently listed as a Federal noxious weed. Because hydrilla is now widely prevalent in the United States, this exotic plant would not now meet the criteria for listing as a Federal noxious weed based on the present definition. A more appropriate definition of a Federal noxious weed would be:

"Noxious weed" means any living stage (including but not limited to, seeds and reproductive parts) of any parasitic or other plant of a kind, or subdivision of a kind, which is of foreign origin, in the

United States, and can directly or indirectly injure crops, other useful plants, livestock, or poultry or other interests of agriculture, including irrigation, or navigation or the fish and wildlife resources or natural ecosystems of the United States or the public health.

It is very similar to your proposed legislation, the definition that you have listed in your proposed legislation.

MELALEUCA TREES

In Florida, melaleuca (*Melaleuca quinquenervia*) trees have already invaded over 450,000 acres and this infestation may be the worst incidence of biological pollution in U.S. history. It is now threatening the Everglades National Park. The entire Florida congressional delegation and the Governor of Florida requested that this wetland invader be designated as a Federal noxious weed. The request was denied by the USDA. From my understanding, the information that was evaluated concerning melaleuca was old and incomplete. The State of Florida was not even contacted regarding the noxiousness of this species. The USDA gave the following excuses: One, they—the USDA-APHIS staff in Maryland—decided it was not a health hazard and no one was allergic to it; two, it is natural for exotic plants to move into disturbed sites, they did not feel it was moving into natural areas, and they felt it was already too late for Florida; three, the National Park Service has not done enough to convince the USDA-APHIS staff that it is a threat to the Everglades National Park; and four, it is a minor ornamental plant sold in California and Hawaii and they did not want to negatively impact that nursery industry. We recommend that there be an establishment of a Noxious Weed Technical Advisory Group, comprised of representatives of Federal agencies, State agencies, and the private sector from different regions of the country who are knowledgeable about exotic plants and their control to make policy recommendations concerning the management of the Federal Noxious Weed Act and to decide the addition or deletion of plant species to the Federal noxious weed list.

IT IS VITALLY IMPORTANT THAT THE FEDERAL NOXIOUS WEED ACT GIVES THE USDA THE AUTHORITY TO HAVE EMERGENCY POWER TO QUICKLY DESIGNATE A PLANT SPECIES TO BE A NOXIOUS WEED

It is vitally important that the Federal Noxious Weed Act gives the USDA the authority to have emergency power to quickly designate a plant species to be a noxious weed. Presently, if a newly introduced plant species exhibits a very aggressive nature or happens to be poisonous to humans, wildlife, or livestock, there is no way to respond at a Federal level to limit its spread or eradicate it before it becomes another hydrilla. All the hydrilla in Florida's waterways can be traced back to six small bundles of plants tossed into a Tampa canal in the early 1950's.

THE FEDERAL GOVERNMENT MUST HONOR THE NOXIOUS WEED RULES AND REGULATIONS ADOPTED BY THE STATES

The Federal Government must honor the noxious weed rules and regulations adopted by the States. It is important that all the USDA-APHIS inspection stations that receive foreign plant mate-

rial, are aware of all State laws concerning prohibited plant species so that the further interstate spread of noxious weeds is curtailed. The proposed legislation by Senator Tom Daschle concerning the classification system of noxious weeds will alleviate these problems.

OUR NATURAL HABITATS AND THEIR ABILITY TO SUSTAIN OUR FLORA
AND FAUNA ARE THREATENED BY AN EVER-GROWING NUMBER OF
AGGRESSIVE EXOTIC PEST PLANTS

In Florida, and throughout the Nation, our natural habitats and their ability to sustain our flora and fauna are threatened by an ever-growing number of aggressive exotic pest plants. These biological pollutants simply invade an ecosystem and "take over" by outgrowing or out-reproducing our native plants. The result is the degradation or destruction of the natural plant community to the point that many or all of the native plants and animals are permanently displaced. Since a large portion of these biological pollutants are related to the agricultural and horticultural communities, the Federal Noxious Weed Act should contain provisions to provide Federal participation to combat these exotic plant invaders by funding control activities by the States. Additionally, long-term cost effective solutions should be developed by funding biocontrol research. We hope that Congress will review all these issues and make the necessary changes in the Federal Noxious Weed Act to benefit our Nation's natural resources.

Also, I have some photographs ¹ here showing some of those biological pollutants and what they are doing to Florida.

Senator DASCHLE. Thank you, Mr. Schmitz.

I wouldn't be surprised if you hadn't even realized that the law calls for a technical advisory committee, and that we have one. It is just that they haven't met for almost 10 years. I wasn't aware of it either until we started looking into this, and Dr. Glosser says that he is now concerned about it. Do you think next week is too soon to call a meeting, Dr. Glosser?

Dr. GLOSSER. We—

Senator DASCHLE. I am being facetious. The point is how soon can you call a meeting and start?

Frankly, let me just be honest with you. I have a little concern about your sincerity about all this. Were we not meeting today, I wonder whether the technical advisory committee would ever meet, whether or not we would ever see many changes, whether or not we would see more cases like we saw with noxious weeds coming into this country and the intrastate regulation of noxious weeds.

It is good that we got religion now, but I am concerned about how converted we really are.

Dr. GLOSSER. Well, I will be very candid with you on a technical advisory meeting. It takes more than a meeting, Senator.

Senator DASCHLE. What does it take?

Dr. GLOSSER. I think it takes commitment, determination, input from our State cooperators, and we have certainly had that repeatedly in the years that I have been involved.

Senator DASCHLE. So you have that.

¹ The photographs referred to by Mr. Schmitz are retained in the subcommittee file.

Dr. GLOSSER. Yes, we do.

Senator DASCHLE. What else does it take?

Dr. GLOSSER. We need the industry commitment, and we need some relief from the constraints on regulating interstate movement.

Senator DASCHLE. Are you saying that prohibition of interstate movement prevents you from having a meeting of the technical advisory group?

Dr. GLOSSER. Well, I don't believe—the technical advisory group can preempt legislative history. One thing that can be done with the committee is to call attention to a problem with the limitations with respect to interstate movement.

Senator DASCHLE. Well, Mr. Schmitz has cited an example in—was it Maryland?—where because of a misinterpretation of the noxious character of a given weed by APHIS you had some serious problems. Is that not what you just said in your testimony?

Mr. SCHMITZ. Right. We found that the people who were making the decisions based on melaleuca were ill-informed and they did not have the background to really adequately evaluate the species. They used old and incomplete information, and essentially they were just looking for an out.

It is very difficult to add or delete a species to the Federal noxious weed list.

Senator DASCHLE. Do you agree with that, Dr. Singletary?

Dr. SINGLETARY. Yes, sir.

Senator DASCHLE. How do you respond to that?

Dr. GLOSSER. I respond that I am not familiar with the criteria that you cited, but when you look at what the act says, new and not widely prevalent as to the criteria for the addition of a noxious weed, these are the criteria that I am familiar with and take into consideration.

Mr. SCHMITZ. Melaleuca is not really widely prevalent. I believe you said in your statement that if it is more than three States, I guess. Melaleuca is a minor component, it is in more than three States, but—

Dr. GLOSSER. 1900 was the first introduction. Right. There is ambiguity. There is no question about that, Senator.

Mr. SCHMITZ. What does "new to" or "widely prevalent" mean? Are there any guidelines?

Dr. GLOSSER. They are not to my satisfaction. Now, perhaps the technical advisory group could provide assistance in setting up parameters and standards today.

Senator DASCHLE. They are not to your satisfaction. So what have you done in the last 24 months to bring them into your satisfaction?

Dr. GLOSSER. Given the resources we have had, we have tried to do the best we could. We have obviously looked at any petition for listing a noxious weed as in the case of melaleuca. The data that was presented to me is that it has been here this century, and it is—what is widely prevalent? One county, two counties, three States or four States? We did say in our written testimony that we find that when it is beyond three States, it is beyond the scope of the Noxious Weed Act.

Mr. SCHMITZ. We in the State of Florida do manage hydrilla. Hydrilla is in 50 percent of its water bodies, and we do have an aggressive plant management. We don't believe that these biological pollutants are beyond control, especially when you take an aggressive stance with managing the plants and then finding a long-term solution, cost effective and environmentally palatable solution, such as biocontrol. We don't write off our natural resources.

Dr. GLOSSER. We do not either, Doctor.

Mr. SCHMITZ. I would like to bring up one point here. In your statement, you say you believe that you want to essentially dump the Federal noxious weed list. I find this to be very alarming that the Administrator of the Animal and Plant Health Inspection Service wants to dump the Federal noxious weed list. You cite the reason why, essentially, is that you don't list by regulation all the species of plants or diseases that we want to exclude from the United States. But who imports pests or diseases on purpose?

Without a Federal noxious weed list, these plants could be imported for ornamental purposes, and every major exotic plant or biological pollutant that is infesting Florida's waterways and wetlands right now were either imported or sold for ornamental purposes. So I think this is very alarming.

Dr. GLOSSER. With respect to exclusion activities, last year, including noxious weeds as well as plant pests or animal diseases, we had 2.7 million interceptions of prohibited material. With that many potential animal and plant pathogens, the value of lists is questionable. When you put a list into law and go through regulation as to a master list, it becomes extremely cumbersome. This is where commitment and working with the industry and the scientists who know the species is a much more streamlined approach, in my opinion, to deal with these than the convening of an advisory committee. The listing of each and every one of them in a regulation is not necessary.

Senator DASCHLE. But how does someone know what the status of these weeds are if there isn't a list? How can you be singing out of the same choir book if you don't have a list?

Dr. SINGLETARY. What is the basis for doing anything?

Dr. GLOSSER. What is the basis on the plant issues that we deal with you on the plant board? There is a good exchange with us, quarterly, daily with our State cooperators, with our importers and exporters.

Dr. SINGLETARY. Mr. Chairman, I think having been involved in some of the history of the Federal noxious weed law, I think that an advisory committee set up in the form of the one that met in 1982 and 1983 to establish the initial list, I think that you can come far closer to agreement on a list of noxious weeds to prohibit the entry in this country and to look at the prohibition on interstate movement there than you can with any other set of plant pests. I think there is far closer to being the ability to establish unanimity there than with other groups of plant pests.

Senator DASCHLE. Do you disagree with that, Mr. Schmitz? Would you agree?

Mr. SCHMITZ. Yes.

Senator DASCHLE. Well, if that is the case, here you have at least two experts who say that you can put a list together upon which

there is broad, universal agreement. I still don't understand your objection to putting a list together, nor do I understand your alternative.

Dr. GLOSSER. Senator, I have no objections to advisory committees. I deal with them all the time. I would agree that you can probably arrive at consensus on what is excludable and what is includable with a list of noxious weeds. But I simply will not say that an advisory committee can preempt or alter the legislative intent of the law.

Senator DASCHLE. Dr. Glosser, where are you coming from here? Let me just tell you——

Dr. GLOSSER. Let me tell you this——

Senator DASCHLE. No, let me just stop you right there for a second, and don't put words in my mouth here.

Dr. GLOSSER. No.

Senator DASCHLE. Because all I am saying is that you haven't met since 1981. We are not asking you to preempt the law; we are not asking you to change the law; we are not asking you to do anything but abide by the law. The law says you ought to have a committee; it ought to decide on what the lists are; and you ought to give us some technical advice.

Dr. GLOSSER. We will——

Senator DASCHLE. We are making stupid mistakes because we don't have technical advice today.

Dr. GLOSSER. Well, what I am——

Senator DASCHLE. How long is it going to take for a committee——

Dr. GLOSSER. Senator, what I am attempting to clarify with respect to the statement that was made is that a committee can give advice, make recommendations, and express concerns about interstate shipment of noxious weeds, but an advisory committee does not have authority to alter law. I certainly welcome the advice of experts in any of the 39 different programs that we deal with in APHIS. I have no problems with a group of experts; we convene them all the time.

Why? I cannot speak for my predecessors as to why this committee has not met since 1981. But when I need information, I will go either to individuals and poll them, or I gather them into a group. The Federal Advisory Committee Act is laborious to do business under, but I have no objections to establishing and recommending that such a group meet.

But I do say that an advisory committee cannot alter legislative intent on interstate movement of a product.

Senator DASCHLE. To my knowledge, no one is suggesting that. Are you, Dr. Singletary? Maybe I misunderstood you.

Dr. SINGLETARY. No, Senator, I am not. I stand to be corrected on this, but in terms of the advisory committee function as outlined in the Federal Noxious Weed Act, that group develops a list that is subject to a public hearing and a normal administrative procedure in terms of how rules are established.

Senator DASCHLE. I understand. Well, I would like to keep the three of you at the table, and we will call the second panel here.

Jay Vroom, the president of the National Agricultural Chemicals Association is in another hearing and could not be with us, but without objection his testimony will be made part of the record.

[The prepared statement of Mr. Vroom appears at the conclusion of the hearing.]

Susan Cooper, staff ecologist for the National Coalition Against the Misuse of Pesticides; Ms. Faith Campbell, National Resources Defense Council; and Mr. Reeves Petroff, supervisor, Gallatin County Weed Control District, Bozeman, Montana will join us.

Let me just say that Max Baucus, a member of this committee and a colleague, has been extremely interested in this issue, and asked on a number of occasions that this panel be brought to the committee as well during this hearing. It is because of his interest and his specific request that we are doing so at this time. He is managing the Clean Air Act on the floor and called just moments ago to indicate he was not able to leave the floor. So on his behalf, as well as the rest of the committee, let me welcome this panel and begin by calling on Ms. Cooper.

Let me also say to you what I said to the other panel; that to the extent you can summarize your prepared remarks in the briefest way, we can get into a little bit of discussion. The entire text of your prepared statement will be inserted in the record.

STATEMENT OF SUSAN COOPER, STAFF ECOLOGIST, NATIONAL COALITION AGAINST THE MISUSE OF PESTICIDES (NCAMP), WASHINGTON, DC

Ms. COOPER. Thank you, Mr. Chairman and members of the subcommittee. I would like to thank you for the opportunity to address you today on the destruction of biological diversity by exotic plants and the promotion of safe pest management techniques for the prevention and control of these weedy invaders.

NCAMP

My name is Susan Cooper, staff ecologist of the National Coalition Against the Misuse of Pesticides (NCAMP). Our membership includes 200 community-based groups in nearly every State. We seek to reduce, and where possible, eliminate pesticide exposure while promoting alternative methods of pest control which do not rely on these toxins.

We applaud you for recognizing the serious threat posed to our diverse ecological systems by noxious weeds, threats which have been introduced into the hearing record by Dr. Singletary and Mr. Schmitz.

INVASIVE EXOTIC PLANTS ARE A REAL AND SERIOUS THREAT TO THE BIOLOGICAL DIVERSITY OF OUR NATURAL ECOSYSTEMS

Invasive exotic plants are a real and serious threat to the biological diversity of our natural ecosystems. Examples range from melaleuca in the South, which is jeopardizing portions of the Everglades, to purple loosestrife, which threatens Midwestern and Western wetlands.

WE MUST ASK OURSELVES IF IT IS APPROPRIATE TO RELY SOLELY ON
CHEMICAL CONTROLS WHICH ARE TOXIC BY DESIGN

However, we must ask ourselves if it is appropriate to rely solely on chemical controls which are toxic by design. In seeking to solve one problem, we are creating another. We are literally replacing biological pollution with chemical pollution of our land, air, and water. Picloram, a herbicide commonly used for weed control, is already known to have contaminated the ground water of eight States, and EPA has repeatedly expressed concerns about its leeching potential. Picloram may cause liver, endocrine, and spleen tumors, testicular atrophy, and subtle neurological damage. There is also a growing body of epidemiological evidence indicating that 2,4-D, another widely used herbicide, is a human carcinogen.

The widespread use of chemicals like these is not a reasonable use of public funds nor an acceptable treatment on public lands. We need to convert to a system of creative decisionmaking, a program of integrated pest management in its purest sense. At the heart of such a program is prioritization as exemplified by the Idaho Panhandle National Forest IPM program.

OUR FIRST PRIORITY MUST BE PREVENTION

Our first priority must be prevention, which will involve revision of the Federal noxious weed list based upon the most up-to-date information and an end to the interstate transport of noxious weeds. Where these plants have become established, we must develop creative solutions. For example, the Creek Tribal Council at Fort Bezkamp, Montana, has proposed that sheep be used to control leafy spurge on tribal lands rather than yearly spraying of the ground water contaminator picloram. The sheep readily eat the weed, would provide long-term control at lower cost than a chemical program, and afford economic benefits to the people. Yet this program is opposed by the Bureau of Indian Affairs which has become accustomed to chemical controls.

WE MUST ACCEPT THAT ERADICATION IS NOT FEASIBLE AND TURN OUR
ATTENTION TO BIOLOGICAL CONTROL

We must accept that eradication is not feasible and turn our attention to biological control, the most environmentally sound, cost effective management scheme for established invaders. Strong Federal support must be assured for cooperative biological control projects.

SUPPORT MORE ADEQUATE CONTROL

In conclusion, we support the intent of Senators Daschle, Baucus, and Conrad to provide for more adequate control of this serious threat to our natural ecosystems. NCAMP believes that the protection of U.S. natural resources from further damage by exotic species will require the attention of appropriately trained personnel around the country operating under an ecologically sound IPM program and with sufficient resources to enact long-term prevention and management.

We support S. 1200 with the attached revisions. Unfortunately, we are unable to support S. 1159 at this time due to its emphasis on agricultural pests which we feel is likely to encourage the inappropriate use of pesticides and its reliance on a cost-sharing system which, like previous efforts of this kind, will result in considerable costs to taxpayers without appreciable results.

NONPESTICIDE INTENSIVE METHODS OF PEST CONTROL ARE BECOMING
MORE WIDESPREAD

Nonpesticide intensive methods of pest control are becoming more widespread. The time is ripe for consistent introduction of powerful integrated management techniques which rely on an intimate understanding of the biology and ecology of pest species and their surrounding environment. And we look forward to working with you and others in an effort to establish Federal laws which meet our goals: safe and effective pest management.

Thank you.

[The prepared statement and attachments of Ms. Cooper appear at the conclusion of the hearing.]

Senator DASCHLE. Thank you.

Dr. Campbell.

STATEMENT OF FAITH T. CAMPBELL, REPRESENTING THE NATURAL
RESOURCES DEFENSE COUNCIL (NRDC), WASHINGTON, DC

Dr. CAMPBELL. Thank you, Mr. Chairman. I am Faith Campbell of the Natural Resources Defense Council, and we appreciate the invitation to appear today to discuss this national crisis.

THE NEED FOR A NATIONAL PROGRAM TO CONTROL INVASIVE EXOTIC OR
ALIEN PLANT SPECIES

We will focus on the need to prevent such invasive plants from swamping natural communities and contributing to the reduction of biological diversity.

ALIEN PLANTS

Alien plants now make up about 20 percent of the wild plants found on the mainland United States. Some threaten America's biological integrity because they smother natural communities. At least two dozen species have been identified by the State of Illinois as threatening natural communities there. I also have some pictures which I will give to you.² Two of these illustrate garlic mustard, which is newly discovered to be invasive. And then this picture shows a type of honeysuckle that is just taking over the woodlands of southern Illinois.

In a survey carried out by the National Park Service a couple of years ago, introduction of or invasion by alien plants was found to threaten areas of 88 national parks in all parts of the country. In conjunction with introduced animals, alien plants were found to be changing the parks' ecosystems.

While the threat has been documented to be nationwide, the worst problems are found in the national parks in Hawaii, where

² The photographs referred to by Dr. Campbell are retained in the subcommittee file.

the ecosystem is particularly vulnerable and the climate conducive to rapid growth of invading plants. There the National Park Service must use labor-intensive, expensive techniques, primarily regular sweeps by trained teams of four to six people through extremely dense vegetation. The teams must search and find every seedling of the target species if they are to be successful, adding to the time spent and, therefore, the cost. These labor-intensive methods are obviously inadequate, and biological control agents promise more success.

As I have just shown you, more ordinary ecosystems on the mainland are also a threat. A botanist in Illinois [John E. Schwegman] says that "Without an active and effective control program it seems possible that every marsh and open wetland in northern Illinois could be lost to purple loosestrife and smooth buckthorn; every mesic prairie in Illinois could be overrun by giant teasel and white sweet clover; and every forest in southern Illinois could eventually have its ground cover replaced by Japanese honeysuckle and purple winter creeper."

Since he wrote that, he has found out about the problem posed by garlic mustard.

BIOLOGICAL CONTROL IS THE LEAST INTRUSIVE METHOD FOR CONTROLLING INVASIVE ALIENS IN NATURAL AREAS

The scientists struggling to hold back this tide agree that biological control is the least intrusive method for controlling invasive aliens in natural areas. It is highly specific, has little effect on non-target plants, causes no pollution, and is economical to use.

As you have already discussed, the current biological control program has not worked well. I would add that, from our perspective, it has too great a focus on agricultural weeds as opposed to those that affect natural communities, and it has never had adequate funding.

AN IDEAL PROGRAM

In our view, I have outlined an ideal program in my testimony. I will glance over some points briefly here.

First, scientists should define the target plants ("weeds") based on clearly defined criteria, with opportunity for public comment.

Second, the focus should be on exotic or alien species, not species native to North America.

Third, the control program should emphasize species-specific measures such as biological control.

Fourth, the law should be amended to provide Federal authority to ban importation of invasive plants and to control their distribution once they are in the country. And here we mean not just those plants that have already been designated as noxious weeds, but any introduced plant species should be thoroughly evaluated and certified as noninvasive before it is allowed into the country. We should not be perpetuating this problem with new species year after year.

Fifth, there should be public policy to control or eradicate designated "noxious weeds" on Federal lands.

Sixth, there needs to be an educational program.

Among other things, to inform the nursery industry why continuing to spread some of these species is not proper business practice.

BILLS NOW UNDER CONSIDERATION

Of the bills now under consideration, I certainly think that your discussion draft that I received several weeks ago was the best, but none of them, I think, provides sufficient coordination of funds to create the kinds of programs that would allow an effective biological control effort. It is expensive, and it does take time.

Our second criticism is that the bills are too narrowly focused on "weeds" affecting agriculture. Senator Daschle you, of course, include the definition of natural ecosystems in the list of impacted sites, but unless we change the makeup of the committee—if the committee ever meets—focus will still be on agriculture.

On the other hand, the definition of "noxious plant" is too broad, particularly in S. 1200, which would include native species.

Thank you very much.

[The prepared statement and appendix A, "Some Invasive Alien Plants Threatening Natural Areas," appear at the conclusion of the hearing.]

Senator DASCHLE. Thank you, Dr. Campbell.

The beepers that you are hearing, and the buzzers and all the lights, indicate that there is a vote. What I am going to do, because I know that immediately after that vote I am going to be called upon to offer my amendment on the floor, let me go immediately to Mr. Petroff, supervisor, Gallatin County Weed Control District, Bozeman, Montana, and then we will adjourn the hearing.

STATEMENT OF REEVES PETROFF, SUPERVISOR, GALLATIN COUNTY WEED CONTROL DISTRICT, BOZEMAN, MT

Mr. PETROFF. Thank you, Mr. Chairman.

For the record, my name is Reeves Petroff. I am and I have been the weed control supervisor for Gallatin County, Montana, for the past 6 years, and past president of the Montana Weed Control Association. I have been on the Glacier National Park Weed Advisory Committee. So, basically, I have a lot of involvement with noxious weeds. Since my prepared testimony is part of the hearing record, I am going to gloss over a few of the major points and kind of add to it rather than read the whole statement.

WE HAVE TWO MAJOR NOXIOUS WEEDS THAT WE DEAL WITH ON A STATEWIDE BASIS

Basically, in my county, and in Montana, we have two major noxious weeds that we deal with on a statewide basis. Those are spotted knapweed and leafy spurge, which are both agricultural pests and also pests of native rangeland and native ecosystems.

MONTANA NOXIOUS WEED CONTROL ACT

My job has come into being mainly because of the Montana Noxious Weed Control Act, and basically what that act does, it mandates that every county have a weed district, every county have a plan, and that efforts are coordinated by agreements.

Basically, the way this whole thing comes together and is coordinated is through a State Weed Coordinator that we have based in our capital of Helena, which is sort of the lead and the coordinator. We have a State Weed Control Association that more or less acts as an informal technical advisory group, where a lot of Federal agencies, local people, State agencies come together a couple of times a year, separate meetings. We have districts in the State Weed Association, and we coordinate.

We have a trust fund that is funded by a vehicle tax and also by a herbicide surcharge, and 25 percent of that is earmarked strictly toward biological control. What that does is basically give us some consistent funding in our weed control efforts. And I guess in spite of being called "the Siberia of North America," I would hope that some people look at this and use it as a framework for attacking noxious weeds, basically the lead technical advisory group and the consistent funding.

I would also like to lend this over to the Federal agencies that own land in Montana, especially in my county which is 1.2 million acres. Seventy percent of that is Federal land. That is 840,000 acres, and that is habitat to elk, to grizzly bear, blue ribbon trout streams, and native rangeland.

A CLEAR MANDATE IS NEEDED

Right now I don't think there is a clear mandate from the Federal Government to Federal agencies to control noxious weeds. That is what we need. We need that mandate. We have a good weed program in our county, but that is because those Federal people are interested in noxious weeds and go out of their way to be trained on noxious weeds. When they leave, the weed program fails.

NO CONSISTENT FUNDING

There also is no consistent funding. The funding for our forests was cut in half for 1990, and that is not very consistent. You can't have consistent programs if you don't have consistent funding. You can't keep projects up. You lose your credibility to the public when the projects don't carry forward from year to year.

WE NEED PEOPLE THAT ARE TRAINED IN WEED MANAGEMENT

What it is right now is these people are mainly trained in range management. We need people that are trained in weed management, at least at a reasonable level, if not at the Federal level, and then have these people come together in a technical advisory group to coordinate, and to take the input from the local level and make a broad management plan that can be applied over these certain regions, districts, forests, whatever.

IDEAS AND KEY POINTS

Some other ideas and some key points in my prepared testimony is, again, the consistent and adequate funding for these Federal land managers. Each of these people should get together that I have mentioned before and discuss this budget and come up with some funds on some realistic figure that they have on data and mapping, whatever, of the noxious weeds.

I would like to go over some of the bills that have been introduced, specifically by Senator Baucus, Senate Bill 2277 (Federal Noxious Weed Act Amendments of 1990). The idea of APHIS as a coordinator is good in theory, as long as they do their job and their goals are clear. Also, if they only act as a facilitator, I would hate to see it get all the funding that is appropriated for that and get bogged down in more redtape in another level of bureaucracy. I would like to see that funding go down to the local level where it can be used.

The bill does stress consistent funding; it does stress State and local cooperation with the Federal Government, which is what we need. But what we need is local and regional development, local and regional coordination, local and regional data collection, have APHIS or whoever facilitate, not actually manage. I don't think they are a land management agency such as the Forest Service, BLM, Department of Interior and so forth. The main thing is to just get that money to the field. That is what we need.

[The prepared statement of Mr. Petroff appears at the conclusion of the hearing.]

Senator DASCHLE. Mr. Petroff I have 3 minutes before I have to be on the floor.

Mr. PETROFF. OK.

Senator DASCHLE. Let me just suggest, I have just talked to my staff. I am going to have Fritz Koppatschek finish out the remaining couple of minutes. What I would like is for any final comments to be made for the record by the witnesses. You have come a long way, and I want to give you every opportunity to have some say for the record. So I will ask Fritz Koppatschek, of my staff, to maintain the Chair, which is somewhat unusual but ought to be done more frequently than it is. But, in any case, let me do that. My sincere apologies to you, but I had better run or I will have a lot of apologizing to do.

Mr. KOPPATSCHKE [presiding]. What can I say? This is a new one.

Are there any further questions that anyone would like to have addressed here while we have everybody at the table?

Mr. SCHMITZ. First of all, I am not a doctor. I don't know how they got that.

Mr. KOPPATSCHKE. OK. Any further questions that anyone would like to bring up? Yes, go ahead, Dr. Campbell.

Dr. CAMPBELL. I understand that the advisory committee is supposed to include representatives from the Park Service and the Fish and Wildlife Service and other people interested in natural areas. I would certainly hope that as the Senator continues to press for a meeting of that committee, a reinstituting of that committee and putting it back to life, that we not forget those agencies, and also that there be input from the similar State agencies, the Departments of Natural Resources, not just agriculture at the State level.

Mr. KOPPATSCHKE. Any other further comments?

[No response.]

Mr. KOPPATSCHKE. With that, then the meeting is adjourned.

[Whereupon, at 3:57 p.m., the subcommittee adjourned, subject to the call of the Chair.]

[Material submitted for inclusion in the record follows:]



APPENDIX

PREPARED STATEMENT OF JAY J. VROOM, PRESIDENT, NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION, WASHINGTON, DC

Mr. Chairman and members of the subcommittee, we appreciate this opportunity to appear before you today to address legislation to improve control of noxious weeds.

As you know, a combination of factors, including farm program costs and environmental concerns, has led to a growing interest in reexamining U.S. agricultural policy and programs. An important concern is the environmental and other costs and benefits of shifting land from agricultural to conservation purposes.

What is becoming increasingly evident is that land must receive careful stewardship regardless of its use. Fallow land is subject to the encroachment of noxious weeds, leading to soil degradation, reduced forage for wildlife, and other problems that ultimately destroy its conservation value. Indeed, the control of noxious weeds, harmful insects, and vermin in nonagricultural land, at low cost, is as important for conservation land as for cultivated acres.

We strongly support use of integrated methods of pest control on land enrolled in the Conservation Reserve Program. These methods include both chemical and non-chemical methods. Chemical pesticides cannot be eliminated without corresponding loss of effective pest control and protection of the environment and natural resources. Chemicals are a vital part of any noxious weed control program.

Where land is in cultivation, the economic impact of pest infestations can be devastating. On dormant land, however, pest control is necessarily focused by cost considerations on those weeds and other pests that present acute environmental, human, and animal risks, and long term economic depreciation. Chemical herbicides are important, but biological and cultural controls that take effect over a longer term may be equally feasible. Short term pest infestations, that would cause significant economic injury in agricultural production, may sometimes be met effectively over several growing seasons in nonagricultural land.

Whatever the method, noxious weeds must be controlled on conservation reserve and government lands to avoid serious environmental and other hazards. Certain weed varieties suppress beneficial vegetation, increase soil erosion, impede waterflow in streams, reduce wildlife shelter and fodder, poison domestic and wild animals, cause fire and safety hazards, and cause human health threats.

State and local governments have wisely made laws requiring the control of these weeds on all lands within their jurisdictions, not just cultivated acres. Spreading weed seeds and roots do not respect fences or property boundaries. Federal programs that mandate or foster conservation measures must respect, encourage, and uphold local noxious weed laws designed to protect agriculture, wildlife, and human health.

Thistle, blackberry, multiflora rose, cedar and other woody plants shade grass for grazing wildlife and compete for nutrients and water. Grasses, furze and brooms increase fire hazard. Hyacinth, reeds and rushes impede waterflow, leading to flooding, poor drainage, mosquito breeding areas, and reduced water for irrigation.

In addition, uncontrolled noxious weeds can degrade adjacent agricultural lands through the need for increased pest control measures, contamination of crops, livestock poisoning, allergic reactions and physical discomfort for neighboring landowners, and, finally, increased difficulty in returning conservation land to productive use.

Bracken fern, wild larkspur, wild cherry, and deadly nightshade are weed species that can be toxic to grazing animals. Certain grasses, cruciferous weeds, barberry and nightshades are hosts for bacteria, fungus, virus and nematodes that attack cul-

tivated crops. Poison ivy, brambles, and thistles, among many weeds, cause serious discomfort to persons enjoying recreational use of conservation lands. Ragweeds and other species that produce allergenic pollen cause widespread suffering at considerable distances from where they actually grow, leading to millions of dollars in economic loss due to medical treatment and lost work time. Finally, Johnson grass in the South and Canada thistle, leafy spurge and quackgrass in the Northern parts of the United States, if allowed to grow uncontrolled, can quickly infect millions of acres.

Noxious weed control in conservation reserve and public lands presents special problems. Frequently these lands are enrolled in the Conservation Reserve Program for environmental reasons believed by some to be incompatible with the use of certain pesticides. Unproductive land, however, frequently cannot sustain more than nominal costs for pest control. Chemical herbicides are frequently the most cost effective option and can be selectively and effectively applied to control the spread of noxious weeds or to eradicate a source of infection.

In many instances chemicals are less than one-third the cost of other pest control measures. For example, enclosed for the record is a list of custom work rates for noxious weed control, recently distributed by Virginia to landowners in Loudoun County. It shows that herbicide application is about \$5 per acre, compared to over \$15 per acre for bushhogging, the only feasible alternative.

Further, when compared with mechanical and livestock grazing options, herbicides provide effective weed control without corresponding loss of cover vegetation and beneficial plants necessary to wildlife propagation, erosion control, and water quality. Chemical control of noxious weeds and other harmful pests may very well be the most benign strategy from an environmental and ecological viewpoint. Mowing and other mechanical control measures kill numerous wild animals directly, while destroying their habitat. Herbicides selectively control unwanted weed species, while causing no harm to the wild animals themselves and leaving their habitat intact and more livable. Systemic herbicides can control certain species of deep rooted perennial weeds, whereas manual or mechanical control measures frequently spread roots and rhizomes of deep rooted perennial to other areas.

Our industry is working on a variety of new ways to control weeds that combine greater efficacy with enhanced environmental protection and safety. The application of genetic engineering to modify plants to resist insects and diseases has already been demonstrated in the laboratory and has significant potential as a pest control strategy. Biological controls through use of beneficial microbes and viruses are in research. Several pesticide producers are already providing a new generation of ultra-low volume herbicides.

In closing, I want to repeat our interest in assisting you in improving the law on noxious weed control. Thank you for the opportunity to discuss this important subject.

I stand ready to answer any questions.

[The attachment, a list of custom work rates for noxious weed control, recently distributed by Virginia to landowners in Loudoun County, "1990 Average Loudoun Custom Work Rates" and the prepared statements and attachments for Dr. James W. Glosser, Howard M. Singletary, Susan Cooper, Dr. Faith T. Campbell, and Reeves Petroff, follow:]

1990 AVERAGE LOUDOUN CUSTOM WORK RATES

TILLAGE OPERATION	UNIT	AVERAGE
Mold board plow	acre	22.50
Chisel Plow	acre	17.00
Disc 1st time	acre	15.00
Disc 2nd time	acre	10.00
Disc "Miller"	acre	16.00
PLANTING	UNIT	AVERAGE
Corn - conventional	acre	12.00
Corn - no-till	acre	15.00
Soybean - conventional	acre	14.00
Soybean - No-till	acre	20.00
Soybean - drill	acre	15.00
Small Grain - no-till	acre	25.00
Small Grain - drill with fert. attach	acre	16.00
Small Grain - drill w/o fert. attach	acre	13.50
Clover & Grass Seeding	acre	15.00
HARVESTING	UNIT	AVERAGE
Corn - Picking	acre	15.00
Corn - combining	acre	23.40
Soybean - combining	acre	25.00
Small Grain - combining	acre	22.00
Orchardgrass seed	acre	1/2 share
HAY	UNIT	AVERAGE
Mow	acre	12.00
Mow & condition	acre	14.00
Rake	acre	8.00
Baling - Rectangular	bale	.60
Cut, Rake & Bale (Rec)	bale	1.05
Bale - large round bales	bale	10.00
SILAGE	UNIT	AVERAGE
Pull Harvester	acre	-
	hour	
Self propelled harvester	ton	5.00
Chop, haul, fill; upright	ton	5.00
	acre	65.00
Chop, haul, fill; Horizontal	acre	65.00
SPRAYING & SPREADING	UNIT	AVERAGE
Herbicide	acre	5.20
Insecticide	acre	3.65
Fertilizer - Dry	acre	4.30
Fertilizer - Liquid	acre	4.55
Fertilizer - Sidedress	acre	6.50
Lime	ton	13.50
MISCELLANEOUS	UNIT	AVERAGE
Brushhogging	acre	16.00
	hour	22.00
Grain hauling; less than 25 mi.	BU	.20
Grain hauling; greater than 25 mi.	BU	.27
Livestock hauling, loaded	mile	1.25
Post hole digging	hole	1.25
Feed Grinding	Cwt	.65
Feed mixing	Cwt	.15

Testimony of Dr. James W. Glosser
 Administrator, Animal and Plant Health
 Inspection Service
 United States Department of Agriculture
 Before the Senate Committee on
 Agriculture, Nutrition, and Forestry
 March 28, 1990

Mr. Chairman and members of the Committee, I am pleased to be here today to discuss some of the complex issues surrounding control of noxious weeds.

BACKGROUND

As you know, Mr. Chairman, noxious weeds have the potential to infest virtually all susceptible land and water in the United States. This vast land and water base is the source of America's food and fiber, and provides economic stability to a large segment of the nation's work force. It is well documented that many weed species have extensive and costly impacts on human health, safety, commerce, and recreation. Noxious weeds can adversely affect food production, wilderness values, wildlife habitat, visual quality, forage production, reforestation, recreational opportunities, and land values.

USDA ACTIVITIES

Programs of the U.S. Department of Agriculture (USDA) influence the use and management of over 1 billion acres of non-Federal range, crop, forest, pasture, and other lands, and the USDA manages more than 190 million acres of publicly owned range and forest lands. Many USDA agencies play a role in noxious weed management. To better coordinate the activities of the Department in implementing effective noxious weed management programs, the USDA developed a noxious weed policy, which was published as a Departmental Regulation on January 19, 1990. This policy was designed to emphasize an integrated pest management approach to noxious weeds, and it stresses "management" over "control" to give USDA the greatest flexibility in noxious weed activities. Finally, the policy provides USDA leadership in promoting cooperation and coordination among other Federal and State agencies and county weed control districts, private organizations, and individuals who are interested in planning and implementing integrated pest management approaches to noxious weeds. To give you some idea of the extent of USDA's involvement in noxious weed management, I would like to outline the activities of a few USDA agencies.

Forest Service

As a land management agency, the Forest Service (FS) must contend with weed problems on lands under its jurisdiction. The FS estimates that noxious weeds occur on 4.9 million acres of National Forest Systems lands, and they are spreading at a rate of 7 to 10 percent each year. On forest lands, noxious weeds affect

wilderness, wildlife habitat, visual quality, reforestation, forage production, recreation, and land values.

Control efforts generally take the form of cooperative programs with State and local officials under the authority of the Cooperative Forest Assistance Act of 1978, the Federal Noxious Weed Act of 1974, and other Federal laws. Such "good neighbor" cooperation has been productive and has steadily increased. Obviously, in an age of limited resources, efforts must be focused on the most serious problems.

Soil Conservation Service

The Soil Conservation Service (SCS) provides technical assistance to landusers in developing and implementing conservation plans. If a noxious weed problem is identified while reviewing a landuser's fields during the planning process, the SCS brings this to the attention of the landuser and encourages proper action to control the weed problem. Specifically, once a problem is identified, the technical specialists provide information to the landuser that stresses the competitive ability of a healthy plant community in controlling the noxious weed infestation. In addition, information is provided that will assist in controlling the perimeter of the infestation.

The negative impact of noxious weeds on range and forest land has led to an in-depth evaluation of how the SCS plant materials program can help address the problem. Two significant areas have been identified:

- (1) through evaluations, plant material specialists match the biological characteristics of noxious weeds with desirable plants, thereby matching the strengths of the desirable plants against the weakness of noxious weeds in the establishment and management of native or pasture plantings; and
- (2) plant material specialists evaluate new germplasm from other parts of the world that effectively compete with noxious weeds in the United States.

We believe this is a sound approach for helping landusers deal with noxious weed problems on their lands.

Agricultural Stabilization and Conservation Service

The Agricultural Stabilization and Conservation Service (ASCS) has developed policies on control of weeds on lands in the Conservation Reserve Program (CRP). To carry out the terms and conditions of a CRP Contract, a participant must comply with the noxious weed laws of the applicable State or political subdivision. State and local governments determine which weeds are considered noxious. In some States, the law provides a grace period to mow, spray, or control noxious weeds.

Under the terms of a CRP contract, participants are responsible for controlling weeds which are not considered noxious as well.

However, the ASCS Committees do not have the authority to require the control of non-noxious weeds on CRP land unless they are interfering with the establishment or maintenance of the permanent cover crop. It is not the role of ASCS under CRP to eradicate weed problems with program funds, and weed control is not eligible for cost-share assistance unless it is approved for payment as part of the establishment of the cover crop. If weeds are precluding the establishment of the approved cover or causing an erosion problem on established cover, the producer would be in violation of the CRP contract.

Science and Education

Several agencies under the Assistant Secretary for Science and Education are involved in noxious weed activities. For example, the Agricultural Research Service (ARS) has a number of research projects focused on control of noxious weeds, including both aquatic and rangeland weeds. This involves both basic research into the nature and physiology of the noxious weeds and applied research on the control of these important weed problems.

The majority of ARS control research is focused on the use of biological control with either insects or pathogens. Recently, several of these projects have demonstrated successful control of weeds with biological control agents. For example, we have achieved almost complete control of water hyacinth using a weevil. In addition, in some areas we have achieved partial control of musk thistle through use of several insects. Current projects include a major effort on leafy spurge and the knapweed complex, including yellow starthistle. ARS works cooperatively with the Animal and Plant Health Inspection Service in the identification and development of weed control technology for noxious weeds.

The Cooperative State Research Service (CSRS) provides funds primarily to the State Agricultural Experiment Stations, which conduct research on a wide variety of issues, including noxious weeds. Research from ARS and CSRS is summarized and available through the National Agricultural Library in Beltsville, Maryland. In addition, the Forest Service, in cooperation with the National Park Service and the State of Hawaii, conducts research on biological control of exotic problem plants in Hawaii.

The Extension Service, through the individual State Cooperative Extension Service, has specialists available in each State to assist interested individuals in identifying noxious weed problems and recommending available control technologies and production practices.

Agricultural Marketing Service

The Agricultural Marketing Service (AMS) administers the Federal Seed Act, which regulates agricultural and vegetable seed moving in interstate commerce. The Act prohibits false labeling and advertising of seed and the shipment of prohibited noxious weed seed into a State. Seed samples are routinely drawn by State seed inspectors to monitor seed sold commercially. If an inspection

reveals infractions of the Act, a complaint may be referred to AMS by the cooperating State agency.

Animal and Plant Health Inspection Service

The Animal and Plant Health Inspection Service (APHIS) administers the Federal Noxious Weed Act (FNWA) in an attempt to exclude noxious weeds from the United States and control damage to agriculture from certain noxious weeds in the United States. The FNWA defines noxious weeds as "any living stage...of any parasitic or other plant of a kind, or subdivision of a kind, which is of foreign origin, is new to or not widely prevalent in the United States, and can directly or indirectly injure crops, other useful plants, livestock, or poultry, or other interests of agriculture, including irrigation, or navigation or the fish and wildlife resources of the United States or the public health."

Because the law restricts the definition to noxious weeds that are "new to or not widely prevalent in the United States," we focus our activities on species that are not widespread, but that are or could cause serious damage to agricultural production if allowed to spread. In our experience, once a weed has spread to more than three States, Federal control efforts are usually futile unless appropriate biological control technology can be developed. Current APHIS control efforts are aimed at hydrilla, common crupina, Orobanche, red rice, and goatsrue. In addition, we are using biological control techniques to combat other damaging weeds such as leafy spurge and diffuse and spotted knapweeds. In fact, ARS has recently identified additional beneficial insects that we may be able to use on leafy spurge in the future.

APHIS complements control efforts and cooperative programs with exclusion activities to prevent the entry of new species of noxious weeds. The FNWA requires that USDA promulgate regulations listing noxious weeds that are prohibited entry into the United States. For the 87 species that are listed, APHIS inspects incoming shipments of plants, seeds, and other articles to ensure that they do not contain any listed species of noxious weeds. In addition to excluding listed species, the FNWA authorizes us to take emergency action to prevent any species of noxious weed from entering or being disseminated in the United States.

Finally, the FNWA prohibits any person from knowingly moving interstate any noxious weed except under a permit from the Secretary and in accordance with prescribed conditions. Unfortunately, the legislative history accompanying the FNWA indicates that Congress intended that the prohibition on interstate movement is only to apply to movements from quarantined areas, and a quarantine would only be imposed with respect to an area in which control or eradication measures are taken by the Secretary in cooperation with a State or political subdivision, farmers' associations, or similar organizations or individuals.

Other USDA agencies, such as the Economic Research Service and the National Agricultural Statistics Service, also play a role in developing needed data and conducting studies on noxious weeds. And, of course, many agencies outside of USDA must deal with the problem of noxious weeds as well. These agencies include the Department of Defense, the Department of Interior, The Department of Transportation, the Department of Commerce, the Federal Aviation Administration, and the Coast Guard.

ISSUES

Probably the greatest problem confronting us in noxious weed control is identifying what constitutes a noxious weed and how to establish priorities for control efforts. Although we recognize that the definition of noxious weeds under the FNWA may be too restrictive, we do not have the resources or technology to expand that definition to include every species of weed that is capable of damaging agriculture or other natural resources. It would be impractical to try. In addition, there is often disagreement, even among specialists, over what constitutes a noxious weed. What is considered a noxious weed in one area may be sold as an ornamental plant in another area. At least nine weeds that are listed under the FNWA are now sold as ornamentals in the seed and nursery trade in the United States.

The key to successfully directing control efforts will be to establish criteria for identifying the weeds, including weeds listed under the FNWA, that cause the most damage and for which adequate control technology is available. The traditional approach to weed management has employed chemical methods. In an age of increasing awareness about environmental issues and concerns about groundwater contamination, it is necessary to emphasize alternative methods such as biological control. Biological organisms may control weeds by killing the weed directly, weakening its ability to compete, impairing reproductivity, or creating pathways for secondary pathogens to destroy the weed. Biological techniques are usually self-sustaining after the biological agents have become established; thus they are often less costly than chemical or mechanical methods that have to be reapplied periodically. In addition, biological control methods tend to be specific, affecting only the target weed, while chemicals are more likely to affect non-target species. The key in any biological control project is to have one or more beneficial agents that are available in sufficient numbers to attack the target weed at various stages of plant development in order to impair its health, reproductive ability, and overall population growth.

While we believe biological control is an appropriate approach to weed problems, we caution that biological control is not a "magic bullet." There is no single biological control method that will work against a number of problems, and effective methods take time to develop. We think the time will be well spent. In the meantime, successful weed control will require a combination of effective biological control, herbicides, cultural controls, sound land management practices, and a high level of public awareness.

We also believe improvements can be made in exclusion efforts. For example, we believe it is unnecessarily cumbersome to have to list the species of weeds that are prohibited entry into the United States. We do not list by regulation all species of pests or diseases that we wish to exclude from the United States, and we do not believe there should be a separate standard for noxious weeds.

That concludes my prepared statement, Mr. Chairman. I hope this testimony has helped to outline some of the issues and problems we all face in determining the most effective way to deal with noxious weeds. I will be happy to respond to any questions you may have.



United States
Department of
Agriculture

Animal and Plant
Health Inspection
Service

P.O. Box 96464
Washington, DC
20090-6464

April 17, 1990

The Honorable Tom Daschle
Chairman, Subcommittee on Agricultural
Research and General Legislation
Committee on Agriculture, Nutrition,
and Forestry
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

I appreciated the opportunity to appear before your Subcommittee on March 28, 1990, to discuss noxious weed issues. The hearing helped focus attention on areas of agreement, such as the need to focus on biological control and integrated management techniques, but it also focused attention on areas that we believe need clarification and further discussion. I would like to address some of those areas in this letter, which I hope can be included as part of the hearing record.

The former Technical Committee to Evaluate Noxious Weeds (TCENW) was mentioned several times at the hearing. I believe, from listening to the testimony, that there are some misconceptions about the status and original role of the TCENW. The TCENW was originally established in 1979 solely to advise the Animal and Plant Health Inspection Service (APHIS) on weeds that should be listed as noxious under the Federal Noxious Weed Act (FNWA). As you know, listing a weed means that weed is prohibited from entering the United States or from being moved in interstate commerce. The TCENW, which included representatives of APHIS, the Agricultural Research Service (ARS), and the Weed Science Society of America (WSSA), met 6 times between 1979 and 1981. In 1981, the group recommended the listing of 840 weeds in addition to the 93 that were already listed.

The recommendation of the TCENW was based on a book by Mr. LeRoy Holmes of the WSSA that classified weeds in five categories ranging from "flora" to "serious." The 840 weeds were all those in the categories "principal" and "serious." Mr. Holmes' classification was based on all "principal" and "serious" weeds throughout the world that were not already widespread in the United States. They were categorized without consideration of their potential effect or ability to survive in the United States. The Agency believed that the listing, and therefore, exclusion, of over 900 weed species without focusing on the relative potential threat of those species or establishing criteria to deal with them would be both biologically unsound and an impossible task.

The TCENW was not convened again after that decision was made, and the Group no longer exists. The TCENW was not established by law and, if recreated, would have to be established under the provisions of the Federal Advisory Committee Act. While we have no objection to reestablishing the group if there is a compelling reason to do so, we do not believe such a group can solve the problems inherent in the FNWA.



APHIS—Protecting American Agriculture

The Honorable Tom Daschle

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One of the problems inherent in the law is related to the activities of the advisory group. In my testimony, I stated that we believe the listing provision in the FFWA is unnecessarily cumbersome. Other members of the panel expressed concern about this recommendation, which I believe merits further discussion. When APHIS acts to prevent the entry of plant and animal pests and diseases, we regulate the products that can play host to those pests and diseases. This gives us the ability to examine any pest that may be present in the host material and evaluate its potential impact on American agriculture. If we determine the pest does not present a risk, the product is released. If it presents a risk, but is treatable, we can order that the product be treated and released. If it presents a risk and cannot be treated, we can order removal or destruction. Many articles cannot come into the country unless accompanied by a permit indicating that required conditions have been met. This system, coupled with authority to take emergency action, gives us the greatest flexibility in dealing with potential risk and eliminates the possibility of having to release a host product simply because the pest it carries is not contained in a published regulation. It also gives us the flexibility to deal with previously unrecognized threats based on biological data.

The FFWA requires that we not only list weeds to be excluded from the United States, but that we hold a public hearing on weeds that are proposed for listing. We believe this is costly, administratively burdensome, and, in the long run, ineffective because listing does not give us the flexibility to deal quickly and effectively with new or previously unrecognized risks. Therefore, we believe the listing provision should be eliminated. We believe a system that allows us to regulate all potential carriers of noxious weeds, as we regulate potential carriers of plant and animal pests and diseases would be sufficient. This does not mean that in, orters of nursery stock, seeds, or other potential host material would be lacking information about what is enterable. We would issue general quarantines and regulations and use emergency authority under section 6 of the FFWA to deal with unforeseen risks that are not addressed in the quarantines. Importers can consult the regulations or contact APHIS to determine whether a product is regulated under a quarantine and whether a permit is required, which is what importers of other commodities do.

The FFWA is burdened by other limitations as well, particularly in the area of control of interstate movements of noxious weeds. The FFWA gave us a mandate to prevent dissemination of noxious weeds within the United States, but constrains us by requiring that we establish a quarantine before regulating interstate movements. This may be a workable requirement, but the legislative history of the FFWA further stipulates that a quarantine should not be put in place without also establishing a control or eradication program (see Senate Report No. 93-1313, December 9, 1974, page 6). Thus, where resources are lacking for a control program, we cannot take action to contain a small infestation, thereby increasing the likelihood that the infestation will spread beyond our ability to control.

The Honorable Tom Daschle

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As you and others mentioned at the hearing, there is also some confusion in interpreting the FFWA as it relates to seed shipments. This is because the FFWA specifically exempts from regulation under the FFWA seeds that are subject to the Federal Seed Act. The conflict arising from this provision resulted in the initial release of shipments of fescue seed that contained noxious weed seeds in 1988/1989. After consultation with our Office of General Counsel, we determined that the weed seed could, in fact, be regulated, and took emergency action under section 6 of the FFWA. This situation would never have arisen without the conflict presented by section 12 of the Act.

One final constraint on our ability to carry out noxious weed programs is the fact that, historically, Congress has earmarked most or all of the noxious weed appropriations for specific control programs. Once we have carried out congressional directives, we do not have sufficient funds remaining to conduct delimiting surveys to determine the extent of serious noxious weed problems so that we can implement reasonable control programs for the most serious problems.

Since specific concerns were raised at the hearing about our decision not to list melaleuca as a noxious weed, I would like to provide more detail about our rationale for that decision. The law defines a noxious weed as one that is "new to or not widely prevalent" within the United States. Melaleuca was introduced into this country around 1900, which means it is not "new to" the United States. In addition, it is already present in four States and the Commonwealth of Puerto Rico, and is, in fact, sold as an ornamental plant in California and Hawaii. I might also mention that melaleuca was introduced into Florida from Australia deliberately to lower the water table in the Everglades before the recognition of water resources as a valuable natural resource. Finally, although the ARS, with the support of the Exotic Plant Pest Council and others, is actively working to develop biological control technology, there are no effective control methods that are widely available for melaleuca.

If melaleuca fit the definition of a noxious weed under the law, listing of the weed would trigger two authorities. We would be authorized to prohibit importations of the plant, and we would be authorized to control interstate movements of the plant. However, as I explained earlier, the legislative history of the Act restricts us from imposing interstate quarantines unless there is a control or eradication program in place. Since we do not yet have adequate control technology, we would not be able to prevent interstate movements of melaleuca.

We have heard from a number of sources that the State of Florida is having a difficult time getting assistance from various sources to battle melaleuca, because those sources believe that our failure to list the plant means that we do not think it is important enough to merit their involvement. I can assure you that this is not the case. We recognize that melaleuca could present a serious risk to the ecosystem in the Florida Everglades. Nonetheless, our regulatory decisions must be based on the law itself.

The Honorable Tom Daschle

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We understand that the Department of Interior's National Park Service (NPS) is actively involved in a management plan for melaleuca in the Everglades, which is part of the National Park System. This plan includes the testing of herbicides, cooperating with the ARS and the Exotic Plant Pest Council in biological control research, and maintaining a buffer zone by cutting the trees and treating the stumps to keep the plant from moving into the Big Cypress Reserve. We would be pleased to provide the NPS any technical assistance we can consistent with our authorities.

I believe there is much we can do to improve our ability to deal effectively with noxious weeds. In fact, provisions are included in Title XVII, Subtitle C of S. 2292 that would consolidate and streamline our plant protection authorities, including the FFWA. In this legislation, the definition of noxious weed has been retained, but the term "noxious weed" has also been incorporated into the definition of plant pest. This would allow us to conduct noxious weed activities in the same unencumbered manner we carry out other plant protection programs. In addition, the listing requirement would be eliminated in favor of flexible regulatory authority to prohibit or restrict the entry or interstate movement of plants, plant products, and articles capable of carrying plant pests (including noxious weeds). Finally, the legislation specifically authorizes the transfer to States and other Federal agencies of biological control technology to control economically damaging weeds, which would encompass weeds that do not fit within the definition of noxious weeds. This legislation would also have the effect of eliminating the constraints placed upon us in the legislative history of the Noxious Weed Act.

I appreciate the opportunity to provide this additional information and would be pleased to discuss any of these issues with you.

Sincerely,

for Larry B. Glade
James W. Glosser
Administrator

Testimony Presented Before the
Senate Agriculture Committee
Subcommittee on Agricultural Research and General Legislation
Wednesday, March 28, 1990, 2:00 P.M.

Howard M. Singletary
Director, Plant Industry Division
North Carolina Department of Agriculture
and
Representing the Weed Science Society of America

Senator Daschle and members of the committee:

I would like to thank you for the opportunity to appear before you and testify about the significant impact of noxious weeds to the United States and directly to North Carolina. My comments represent the views of the State of North Carolina and also those of the Weed Science Society of America of which I am a member and serve as Chairman of the Federal Noxious Weed Law Committee. The Weed Science Society is composed of weed scientists in the academic community, private industry, regulatory and public service industry and private practitioners with a membership of approximately 2,300 members.

At present, there are at least 200,000 species of flowering plants in the world. Of these, approximately 250 plants have been identified as important weeds either as direct competitors with crops or as plants that interfere directly with people. Many of these weeds have been introduced from distant geographical areas into the United States. When these weedy species are placed into a new environment lacking the environmental and biological restraints of previous habitats, their aggressive behavior may allow them to become serious weed pests in agricultural situations: rangeland, wetlands or aquatic areas.

The economic consequences of crop losses due to the presence of weeds is staggering. It has been estimated that 10-15% of the total market value of farm and forest products in the United States is lost to weeds. This translates into agricultural losses around \$10 billion dollars per year. It is estimated that agricultural producers in the United States now spend about \$3.6 billion annually on chemical weed control and \$2.6 billion for cultural, ecological, and biological methods of control.

Most of the serious weed problems in the United States are of foreign origin. Unfortunately, in the past the potential for serious problems has been recognized only after the plants escape and infest areas often beyond the scope of eradication. Congress recognized the importance of foreign weed introductions and passed the Federal Noxious Weed Act of 1974 which was signed into law by the President on January 4, 1975.

The act provides the Animal and Health Plant Inspection Service with the mandate to prevent the entry of foreign noxious weeds into the United States. Funding, however, has only been appropriated in five of the past 15 years. In addition, funding has been directed toward specific weed problems rather than general funding that would allow for the implementation of the act.

Since its inception, interpretation of the Federal Noxious Weed Law itself has led to various problems. This fact is shown clearly in two examples in North Carolina.

The North Carolina Department of Agriculture has just completed a very successful eradication effort removing itchgrass, a weed on the federal noxious weed list, from the state as an agriculturally important pest. Itchgrass is a serious weed pest in corn, soybeans and sugarcane and had it been allowed to establish in our state, farmers could have experienced as much as \$50 per acre in additional weed control costs on generally infested land. This eradication effort involved state funds in the amount of \$250,000 and follow-up survey by personnel for a period of five years. Unfortunately, this weed could be re-introduced into the state at any time due to present interpretations of the Federal Noxious Weed Law. It is noted in Section 4 of the Federal Noxious Weed Act the federal noxious weeds cannot be moved interstate in the United States without a permit from the Animal and Plant Health Inspection Service. The legislative history of the act interprets the restrictions as applying only to movements of federal noxious weeds from areas quarantined under the Federal Noxious Weed Act. As a result, the Animal and Plant Health Inspection Service has not restricted the interstate movement of federal noxious weeds. The threat of possible re-introduction into North Carolina would counter the intense eradication efforts mounted against this weed.

A second weed problem has surfaced in the past two years that has been directly associated with misinterpretation of the Federal Noxious Weed Law. Serrated tussock is a serious introduced weed pest in pastures in Australia and New Zealand and is reported in some cases to cause death of livestock. This weed was introduced into the country through infested tall fescue from Argentina in late 1988. It was determined at this time that even though the tall fescue was infested, it had to be released due to a provision in the Federal Noxious Weed Act that prevented stop sale action to be taken since these seeds were regulated under the Federal Seed Act. Infested tall fescue seed lots were allowed to move throughout the country including North Carolina. An OGC review initiated because of congressional inquiry in February, 1989 reversed this decision and regulatory actions were taken to prevent the spread after the horse was already out of the barn. During the interim period, as much as 15,195 pounds of contaminated tall fescue was sold in our state. Action has been taken to alert local extension agents and others that may be instrumental in locating possible infestations that may spring up across the state.

From a national perspective, the Weed Science of America consider the adoption of the Federal Noxious Weed Law to be a milestone. It is, however, the consensus of the society that several recommendations need to be considered that would enhance the effectiveness of the Act and allow for full implementation.

The society respectfully recommends:

- (1) That the definition of noxious weed in Section 2 (C) be redefined. This definition should also be expanded to include aquatic weed species and wetland species.
- (2) That a Noxious Weed Technical Advisory Group be established to evaluate candidate species, develop appropriate classification criteria for noxious weeds, and make other recommendation for carrying out the intent of the law.
- (3) That emergency authority be provided to the Administrator of APHIS to prohibit the entry of foreign weeds that meet the definition of a Federal Noxious Weed but have not been listed as such.
- (4) That appropriate language be inserted in Section 4 of the law clearly prohibiting intentional movement of federal noxious weeds across state lines except under permit.
- (5) That a weed classification system be outlined that will categorize the status of federal noxious weeds. This classification system would allow regulatory officials to understand the status of and level of action being taken against specific weeds.
- (6) That the statement in Section 12 that exempts regulation of shipments of agricultural and vegetable seeds under the act be deleted.

In addition, the society also endorses the Federal Undesirable Plant Management Act which has been introduced or is being introduced. This proposed legislation provides the mechanism for cooperative efforts among federal and state agencies in managing weed problems on adjacent federal and state lands. We would also urge that full funding be provided to implement a full range of weed management activities as authorized by the Federal Noxious Weed Act.

Now more than ever there is increased potential for introduction and spread of noxious weeds into this country. I believe it is vitally important that these amendments that I have discussed be considered for inclusion in the Federal Noxious Weed Law. Further, I would encourage that funding be included to fully implement the law as amended. Without these necessary changes, the ability to develop proactive strategies to address noxious weeds in the United States will falter. I would hope that you as members of Congress will carefully review these issues and take appropriate action.

National Coalition Against the Misuse of Pesticides

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STATEMENT OF
SUSAN COOPER, STAFF ECOLOGIST
NATIONAL COALITION AGAINST THE MISUSE OF PESTICIDES
BEFORE THE
SUBCOMMITTEE ON AGRICULTURAL RESEARCH AND
GENERAL LEGISLATION
COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY
U.S. SENATE

MARCH 28, 1990

Mr. Chairman and members of the subcommittee. Thank you for the opportunity to address you today on issues of importance to conservationists, the public and our membership – the destruction of biological diversity by exotic plants and the promotion of safe pest management techniques for the prevention and control of these weedy invaders.

I am Susan Cooper, Staff Ecologist of the National Coalition Against the Misuse of Pesticides (NCAMP). NCAMP, founded in 1981, has been working with local groups and people across the United States and around the world in an effort to ensure safety from pesticides in our food, water, land and air. Our membership is composed of urban and rural people, both on and off the farm, including approximately 200 community based groups in nearly every state, with concerns about a range of pesticide-related issues, who seek to reduce and where possible eliminate pesticide exposure while promoting alternative methods of pest control which do not rely on these toxins.

I appear here today on behalf of people across this country who applaud you for recognizing the serious threat posed to our diverse ecological systems by noxious weeds, and the need for a cooperative effort between federal and state agencies to prevent future infestations and control existing ones on both federal and private lands. Unfortunately, our message today is not without concern and criticism. Noxious weeds are not primarily an agricultural problem, as has been the focus of some recently proposed legislation, but rather they are a threat to the native plant and animal life of many regions of this country. It is imperative that the focus of exotic plant

control be kept upon the protection of natural ecosystems, rather than used as a vehicle to sanction widespread use of chemical controls on agricultural and range lands which will result in further environmental degradation.

It is also essential that any effort to improve noxious weed control be founded on an ecologically based management system which will give more than just passing attention to non-chemical control methods. A reasonable, successful noxious weed control program will require: long-term control goals; adequate, dedicated personnel with available resources; the prioritization of biological threats; emphasis on prevention of future infestations; and use of chemical control methods only as a last resort and with full recognition that pesticides are only a stop-gap measure and will not meet the stated long-term goals of the program.

Finally, cost share systems, such as the one proposed in S. 1159, which would require agricultural producers to perform control on a cost share basis, would be expensive without effecting adequate weed control or suppression and would be likely to lead to environmental degradation through the overuse of pesticides. Noxious weeds are not primarily an agricultural problem but a natural resource problem which threatens biological diversity.

I. Exotic plants are a real and significant threat to natural ecosystems.

The legal term "noxious plant" refers to a plant which appears on a state or federal noxious weed list. The noxious weed list is typically comprised of plant species which are found to be: highly destructive, competitive and difficult to manage; carriers of insects or disease; or having a direct or indirect detrimental effects on native ecosystems. Only exotic species should be considered for inclusion on any noxious weed list.

The vast majority of plants meeting these guidelines are exotic plants, meaning that they are not members of the native or natural communities which they have invaded, but have been introduced from other habitats, largely through human intervention. This definition should include plants which have subsequently become so pervasive that they are considered to be naturalized, if such plants are known or strongly suspected to have been introduced. While some weedy invaders may be poisonous and others are of little economic value, it must be emphasized that these traits alone should not qualify them as noxious weeds, any more than a plant of acknowledged economic value should be allowed to reduce biological diversity by replacing native species merely because a sector of the population finds such a course to be expedient.

Examples abound of introduced plants which have proliferated and now threaten native ecosystems. The number of exotic plants introduced into the

United States was estimated to be 180,000 species by 1950¹. Given that many of these species were imported without their native, adapted complex of herbivores, parasites, diseases and seed predators it should not be surprising that at least a portion of them have thrived and multiplied in conducive climatic conditions. Morton estimated that over 170 exotic plant species had escaped and become well established in South Florida alone by 1976². A more recent survey of Florida's waterways by the Florida Department of Natural Resources (FDNR) found 137 aquatic plant species covering 137,598 hectares, more than one quarter of the surveyed area. The exotic invader hydrilla, *Hydrilla verticillata*, which is known to disturb native aquatic habitats, comprised 16% of all aquatic plant samples taken in the FDNR's survey. And it was estimated that two species which disrupt wetland ecosystems and displace native species, melaleuca, *Melaleuca quinquenervia*, and Brazilian pepper, *Schinus terebinthifolius*, occupy more than 10,000 hectares each³.

Other areas of the country have also been plagued by weedy invaders, from kudzu, *Pueraria lobata*, in the eastern United States which has overgrown vast acreage of native flora, to Klamath weed or St. John's-wort, *Hypericum perforatum*, which once plagued grassland systems in the midwest, northwest, and west, to purple loosestrife, *Lythrum salicaria*, which threatens midwestern and western wetland species. These are but a very few examples of a problem whose existence is well acknowledged.

The most serious threat posed by these weedy invaders is that if left unchecked they may severely displace native flora and fauna. The lessons being learned of the intrinsic value of plant and animal species in the Amazon River basin are no less true of our own ecosystems. We must keep in mind that public lands must be managed not just for the benefit of large and popular game species, nor for the advantage of a few individuals who utilize public forests and rangelands for private profit, but for all of the life which these areas foster and the national heritage which they represent.

¹Klose, N. *America's Crop Heritage: The History of Foreign Plant Introduction by the Federal Government*. Iowa State College Press, Ames, 1950.

²Morton, J.F. Pestsiferous spread of many ornamental and fruit species in south Florida. *Proc. Fla. State. Hort. Soc.* 89:348-353, 1976.

³Schmitz, D.C., B.V. Nelson, L.E. Nall, and J.D. Schardt. Exotic aquatic plants in Florida: A historical perspective and review of the present aquatic plant regulation program. In *Proceedings of the Symposium on Exotic Pest Plants*, Miami, Florida, 1988.

II. Eradication is not a feasible goal.

Eradication is not a reasonable or technically feasible goal. A properly designed noxious weed management program should consider only feasible and realistic goals including prevention, control, and containment and suppression. No eradication program has ever succeeded against an established pest, and while the concept may appeal to the uninformed who hope for permanent solutions, emphasis on eradication establishes unrealistic goals which will not be met.

III. Need for a long-term, prevention oriented strategy, with an emphasis on least toxic management alternatives.

To be successful, a Noxious Weed Management program will require greater cooperation between federal and state agencies, operating under a basic tenet of sound integrated pest management (IPM). Such a program should be based on the classical definition of IPM as put forth by pest management specialists like Robert van den Bosch and Mary Louise Flint. An IPM approach to weed management considers each population of a weed species as it relates to other plants and resources in the ecosystem which surrounds it. This is in contrast to conventional programs which typically consider pest weeds in isolation from the environment they have invaded. This type of program will not only achieve the most thorough and lasting management of noxious weeds, but is the only sound prospect from a long term perspective -- ecologically, environmentally and economically.

A sensible weed IPM program would have at its core a decision making process designed to guide managers in understanding the biology of the natural systems in which they work, in assessing the potential impacts that their decisions may have, and in selecting techniques which work in the best long term interest of the natural communities involved. There is considerable precedent for the establishment of IPM programs and decision making processes throughout the nation. Most notably, two major weed control projects, the USDA/Forest Service's Pacific Northwest Region and Northern Region weed management programs, have been the subject of litigation due to overemphasis on herbicide use. In both cases the mandated environmental impact statement found an IPM program with allowable but minimized use of pesticides to be the soundest alternative for weed management⁴.

⁴ U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. *Managing Competing and Unwanted Vegetation: Final Environmental Impact Statement*, November, 1988. USDA, Forest Service, Northern Region. *Idaho Panhandle National Forests Weed Pest Management: Final Environmental Impact Statement*, October, 1989.

Prioritization and treatment strategies must have a number of central components including: an emphasis on prevention of future infestations, cooperation between federal and state programs to prevent the interstate transport and establishment of problem weeds, treatment of new infestations before they become well established, use of non-chemical controls as a first line of defense and the primary component in ecosystems vulnerable to ground and surface water contamination, emphasis on classical biological control programs for particularly pervasive weeds, and of course standard IPM program features like public and staff education, monitoring of pest populations, setting of injury and action levels, and development of diagnostic evaluation systems. It is important that legislation not overemphasize lower level management methods but rather outline the prioritization scheme and the need for an appropriate decision making process.

NCAMP suggests that the Idaho Panhandle National Forest IPM program be used as a model for all U.S. National Forest weed control programs, as well as noxious weed control programs for both federal and private lands. While some further work may need to be done on procedures for the establishment of appropriate damage and action thresholds, the Idaho Panhandle program appropriately emphasizes a creative decision making process which will significantly reduce the use of herbicides while improving weed control, and establishes a reasonable prioritization system for weed IPM.

A. Prevention must be emphasized as the most effective and economical management measure

The primary cause of weed infestations is the lack of solid prevention programs. IPM follows the same strategy that doctors have been pursuing in recent years with regard to human health, a strategy that emphasizes prevention. A sound noxious weed IPM program must focus on prevention and mitigation of the conditions which allow noxious weed populations to invade and expand. This is a large purview, involving sources of contamination as varied as ship ballast discharge and ornamental plant shipments from national catalogs, requiring attention at the state and regional levels for adequate protection. However, prevention is widely becoming recognized as the most sensible, economical course in matters of environmental protection. Prevention should be appropriately emphasized in any legislation on noxious weed management, both within definitions, like S. 1200's "integrated management systems" and "interdisciplinary approaches," and as part of the mandate and focus of the management plans themselves. S. 1200 should "establish integrated management systems to prevent, control or contain undesirable plant species targeted under cooperative agreements" (Section 4 (4)).

B. Biological control is the most environmentally sound, cost effective management scheme for established invaders.

Classical biological control provides what may be the only long-term solution for established noxious weed infestations. As concern about extensive environmental contamination by pesticides increases⁵, along with increasing resistance of weeds to pesticides, the advantages of biological control methods become more apparent. The use of a weed's naturally occurring herbivores makes considerable sense and offers a control option with a far smaller likelihood of causing environmental damage than the widespread use of toxic chemicals. In addition, it should be noted that eradication of well established weedy invaders has never been achieved through the use of chemical controls, and is considered not to be technically feasible.

Resistance to herbicides by weeds was first reported in 1970, and has been documented in some 54 species, a 450 percent increase since 1980⁶. To date, most biological control projects have focused on plants for which chemical control methods proved inadequate. This should be indicative of this method's potential. Biological control success stories include prickly pear, *Opuntia vulgaris*, which infested some 60 million acres in Australia and was successfully controlled with the affected acres reclaimed by introduction of the moth *Cactoblastis cactorum*, as well as alligatorweed, *Alternanthera philoxeroides*, *lantana*, *Lantana camera*, and St. John's-wort in California.

Over the long-term, biological control is clearly cost-effective, since an adequate control agent, once introduced, will provide lasting benefits. Eradication of established pests is not feasible, but they can be permanently controlled through the use of biological control. For example, the Klamath beetle, *Chrysolina quadrigemina*, decimated 99% of the California St. John's-wort population within a decade of introduction. This project resulted in permanently accruing cost savings of millions of dollars, including \$20 million

⁵U.S. Environmental Protection Agency, Office of Pesticide Programs. *Pesticides in Groundwater Data Base: 1988 Interim Report*. Washington, DC December 1988. Goolsby, D.A., E.M. Thurman, D.W. Kolpin, and M.G. Detroy. "A reconnaissance for triazine herbicides in surface waters of the upper midwestern United States." Second National Symposium on Water Quality. Orlando, Florida, November, 1989. California Department of Food and Agriculture, Environmental Monitoring and Pest Management Branch. *A Field Study of Fog and Dry Deposition as Sources of Inadvertent Pesticide Residues on Row Crops*. Sacramento, California, November, 1989.

⁶Grossman, J. Update: Biological Control of Weeds -- What's happening, what's needed?. *IPM Practitioner* 11(6/7):1-11, 1989.

under FIFRA. One popular rights-of-way herbicide, triclopyr, for instance has not yet been reviewed by EPA to determine what tests are missing or inadequate. Next to nothing is known about the potential synergistic effects or even the identity of the solvents, preservatives, and other "inert" ingredients in these and all other pesticides. In general, very little is known about the potential for environmental damage from many of the most commonly used non-agricultural herbicides, including those for rangeland use. Yet, given that pesticides are by their very nature toxic compounds, it seems only reasonable to advocate considerable discretion in their use. Those who apply the chemicals are likely to receive significant exposures.

Numerous cancer mortality and case-control studies indicate that farmers, pesticide applicators, forestry workers, and pesticide plant workers suffer elevated rates of some cancer types, particularly lip, stomach, leukemia, lymphatic, multiple myeloma, and prostate⁸. Most studies have been unable to associate specific types of pesticides with specific types of disease. However, exposure to phenoxy herbicides (2,4-D, mecoprop, MCPA, all of which are widely used herbicides) have been linked with increased risk of specific cancers of the lymphatic and blood systems. For example, a 1986 National Cancer Institute study of Kansas farmers reports that those exposed to 2,4-D for 20 or more days per year were six times more likely to develop non-Hodgkins lymphoma than nonfarmers. Even higher risk was found for farmers who frequently mixed or applied the herbicide themselves⁹. These studies are merely indicative of some of the potential human health effects from pesticide exposure. We have included more extensive toxicological profiles of the more commonly used herbicides as an addendum to this testimony.

The environmental consequences of large scale introduction of toxins to natural areas is also inadequately assessed. Many of the chemicals currently used for weed control may have significant effects on other plants as well as on wildlife. Furthermore, our members strongly question the use of groundwater contaminants like picloram on public lands. According to EPA's preliminary report on groundwater contamination, 74 pesticides have been detected in the groundwater of 38 states due to non-point source

⁸Statement of Leon F. Burmeister, Professor, Department of Preventive Medicine and Environmental Health, University of Iowa, Before the Subcommittee on Department Operations, Research, and Foreign Agriculture, Committee on Agriculture, U.S. House of Representatives, May 21, 1985.

⁹S.K. Hoar, et al, "Agricultural Herbicide Use and Risk of Lymphoma and Soft-Tissue Sarcoma", *J. Amer. Med. Assn.*, 256(9): 1141-1147, 1986.

between 1953-1959⁷.

C. Pesticides are of real and serious toxicological concern for human health and the environment.

NCAMP supports the goal of the complete elimination of pesticide use. We do recognize that viable short term alternatives are not always available or feasible, and that protection of native ecosystems may sometimes require the limited use of pesticides. However, we must emphasize that chemical control measures must only be used as a last resort, after serious consideration of all other alternatives, recognizing the serious environmental and human health hazards posed by these chemicals, and with every effort to minimize the toxicity of the chemicals used and exposure of the environment and humans involved in application. Application methods must be species specific -- i.e. applied only to plants of the species of concern, and properly timed to the period of maximum susceptibility of the particular plant species involved.

In no case is aerial application of pesticides considered to be warranted. In cases where infestations are so extensive as to result in the mere consideration of such measures, the weedy invader is clearly already established, and tolerance thresholds must be established.

Pesticides are of real and serious toxicological concern for both human health and the environment. Some of the more commonly used herbicides in noxious weed management include: picloram (TordonTM), 2,4-D (WeedoneTM, Tordon 101TM), dicamba (BanvelTM), triclopyr (GarlonTM), glyphosate (RoundupTM), fosamine ammonium (KreniteTM), and hexazinone (VelparTM). Despite the fact that new studies are continually finding serious problems associated with exposure to commonly used herbicides, like 2,4-D, EPA considers exposure to rights of way pesticides and many other commonly used rangeland and silvicultural herbicides to be low given their pattern of use, and thus lets them off the regulatory hook to a large degree. For example, the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) only conditionally requires chronic feeding, cancer, birth defects, and reproductive effects testing for pesticide chemicals. Environmental fate studies such as those on the bioaccumulation of a particular pesticide in fish, the effect of sunlight on the degradation of a pesticide, and soil dissipation are similarly only conditionally required. In practice, unless a herbicide is also registered for use on food, extensive testing is not required, and several vital tests may be missing from the data-base.

Indeed, EPA may not even know what data are in its files on a pesticide if it has not yet been through the reregistration process as required

⁷Ibid.

contamination¹⁰. It seems wholly inappropriate for those charged with the protection of our natural resources to risk contamination of ground and surface waters with pesticides.

In general, we must reiterate that chemical control measures must only be used as a last resort, after serious consideration of all other alternatives, recognizing the serious environmental and human health hazards posed by these chemicals, and with every effort to minimize the toxicity of the chemicals used and exposure of the environment and humans involved in application. Application methods must be species specific - ie. applied only to plants of the species of concern, and properly timed to the period of maximum susceptibility of the particular plant species involved.

IV. Increased federal attention and improved interstate and federal cooperative programs.

As previously mentioned, many serious weed pests are not native to areas which they infest, and are thus imported either actively or passively from other countries or regions. Under the Federal Noxious Weed Act (FNWA), APHIS/USDA has been actively involved in screening imported species to prevent plants on the Federal Noxious Weeds (FNW) list from entering the country. In some cases, branches of the inspection service have actively cooperated with state agencies to help prevent importation of plants appearing on state noxious weed lists as well as the federal list. However, this kind of cooperation has not been dependable or sufficiently pervasive, both due to friction between agencies and inadequate staff devoted to noxious weed control at both federal and state levels.

A. Adequate revision of the Federal Noxious Weed list

It is imperative that the system for listing and delisting of noxious weeds be improved so that the list remains up to date, and so that proper consideration is given to the needs of states in preventing infestations. To achieve this kind of cooperation, federal officials dedicated to noxious weed control must regularly review the latest literature on exotic weed infestations and remain in close contact to state officials whose duties involve the monitoring of infestations and the determination of candidates for particular concern with regard to prevention. The FNW list must be updated to conform with all state noxious weed lists to ensure the prevention of the further spread within the United States of weeds which have already infested some regions.

While we support the concept of a "Noxious Weed Technical Advisory Group" as suggested by Senator Daschle, we believe that such a Group should

¹⁰Op cit., U.S. EPA, 1988, p. 1-2.

be formed of individuals who will have ongoing involvement with noxious weed control at the federal and state levels in order to provide consistent periodic reevaluation of noxious weeds of concern.

B. Appropriate allocation of dedicated staff.

The nature of exotic plants and their dispersion makes their control a matter of both national and regional interaction. Recognition of potential future problems and solutions to existing ones must be afforded at the regional or state level, while prevention of problems through international and interstate trafficking as well as coordinated research will need thorough federal attention. It is important to realize that staff whose sole job function is the prevention and management of weed infestations will have to be allocated at the regional or state level in order to assure sufficient resources for program management. National Parks already have staff devoted to integrated pest management. It is reasonable and appropriate to dedicate similar staff to protect our National Forests, Bureau of Land Management acres, and other national resources. A specific federal office of noxious weed management as outlined in Section 4 (a)(1) of S. 1200 is an excellent step in this direction, but a few individuals working at the national level will not be adequate to the task of prevention and management of our diverse national resources.

C. Improved control and enforcement of interstate transport

In addition, much more stringent regulation of interstate transport of plant materials must be enacted and enforced to prevent the spread of potentially invasive exotics from one part of the country to another. While Section 4 of the Federal Noxious Weed Act states that Federal Noxious Weeds cannot be moved between states within the United States without a permit from APHIS, the traditional interpretation of this section has been to apply this restriction only to areas quarantined under Section 5 of FNWA, of which there are currently none. Clearly this measure cannot be considered adequate for the prevention of interstate transport, given reports from states like Florida which site horticultural mail shipments as a primary route of the migration of exotics¹¹. Adequate protection against future infestations will only be afforded by a strong enforcement program relying on a comprehensive FNW list which includes plants of concern to the states, as described in the previous section. The interstate transport of any plant which appears on an appropriately updated and comprehensive FNW list should be prohibited by federal law.

¹¹Personal communication with Don Schmitz, Florida Department of Natural Resources, February 26, 1990.

D. Strong federal support must be assured for cooperative biological control projects.

For success, a biological control project requires considerable investment of resources, and is most often successful when interdisciplinary and even international cooperation is achieved. Such cooperation reduces the time to successful completion of a project, and improves the rate of return by spreading the cost among interested parties while increasing the rate of return through dissemination of successful control organisms to other areas or countries with similar noxious weed infestations. Some estimates of the cost of biological control have been as high as \$4 million per weed species¹². Yet, when considered beside the costs of temporary control measures this investment makes great sense. In the past ten years alone, exotic plant control efforts have cost Florida taxpayers \$104 million¹³, and this does not include any estimate of losses from the presence of those weeds. Biological control does provide options for long-term solutions to exotic weed control, but the nature of research suggests that it will require extensive federal involvement to coordinate interstate and international efforts, as well as a determination on the part of USDA to dedicate resources to research and promotion of biological control.

V. Noxious weed management on Conservation Reserve Program lands.

Recognizing the potential importance of weed seed banks in uncultivated lands, we support the establishment of exotic weed management programs for Conservation Reserve Program (CRP) lands, provided that any issued technical guides thoroughly address the tenets of IPM as described above. In accordance with weed IPM prevention principles, such a program should at a minimum contain the necessity of utilizing only certified weed-free seed on all CRP lands.

It is not uncommon for seeding practices to result in the unintentional introduction of noxious weeds and the establishment of infestations. In one case, a forest fire rehabilitation project in Forest Service Region 6 resulted in the accidental seeding of the noxious weed yellow star thistle on 6,000 acres in the Hells Canyon National Recreation Area due to the use of contaminated grass seed¹⁴.

¹²Harris, P. As quoted in Grossman, J. Update: biological control of weeds - What's happening, what's needed? *IPM Practitioner*, 11(6/7), 1989.

¹³Op cit, Schmitz et al., 1988, p.1.

¹⁴USDA Cooperative Extension Service, Washington State University. Informational flier. Pullman, Washington, 1989.

VI. Cost sharing systems for agricultural users have not been and will not be effective.

Noxious weeds are not primarily an agricultural problem but a natural resource problem which threatens biological diversity. While we recognize that agricultural users are legitimately concerned about noxious weeds, particularly on rangeland where overgrazing often worsens weed infestations, cost share programs have never been successful in controlling noxious weeds despite wide usage in states around the country. The evidence is clear and irrefutable, noxious weed infestations have consistently worsened both in the number of species causing problems and in the degree of infestations.

Cost sharing system, such as the one proposed in S. 1159, which would require agricultural producers to perform federally subsidized weed control, would be expensive without effecting adequate weed management and would be likely to lead to environmental degradation through the overuse of pesticides. While S. 1159 does mention the formation of an "integrated management system," this term is never defined. It is in no way clear that such a plan would appropriately train millions of our nation's farmers to properly implement a weed IPM program. Furthermore, percentage participation rates are typically not an adequate measure of the potential success of a weed infestation management program. In a serious effort to prevent the spread of an infestation, anything below 100 percent participation is not likely to succeed, and funds allocated to such a program would thus be in vain.

VII. Conclusion

In conclusion, we support the intent of Senators Daschle, Baucus, and Conrad to provide for more adequate control of the serious threat to our natural ecosystem from noxious weeds. NCAMP believes that the protection of U.S. natural resources from further damage by exotic species will require the attention of appropriately trained, dedicated personnel around the country operating under an ecologically sound integrated pest management program for weeds, and with sufficient resources to enact long-term prevention and management strategies.

We support S. 1200 with the attached revisions. Unfortunately, we are unable to support S. 1159 at this time due to its emphasis on agricultural pests which we feel is likely to encourage the inappropriate use of pesticides, and its reliance on a cost-sharing system which like previous efforts of its kind will result in considerable cost to taxpayers without achieving appreciable noxious weed control results.

The use of non-pesticide intensive methods of pest control are becoming more and more widespread. We feel that the time is ripe for consistent

introduction of powerful integrated pest management techniques which rely on an intimate understanding of the biology and ecology of pest species and their surrounding environment. And we look forward to working with you and others in an effort to establish federal laws which meet our goals - safe and effective pest management.

Suggested Revisions to S. 1200
The Noxious Weed Control Act

- * Section 1. SHORT TITLE. "Noxious Weed ~~Control~~ Management Act."
Emphasis must remain on the fact that weedy pests cannot be fully controlled but only managed to acceptable levels, and when possible prevented.
- * Section 2 . FINDINGS.
 - (b) Consequences of Inaction. The Congress further finds that unless undesirable plant species are prevented, controlled or contained, they will--
Throughout the bill, emphasis must be maintained on prevention and ecologically sound practices.
 - (d) Necessary Action. (3) protect biological diversity and habitat for wildlife and domestic animals on the Federal lands by reducing the spread of undesirable plants which are detrimental to ~~desirable~~ endemic vegetation.
The primary resource threatened by noxious weeds is our native biological diversity and ecosystems.
- * Section 3. DEFINITIONS.
 - (2) Exotic plant -- The term "exotic plant" means a plant ~~with one or more of the following attributes -- which~~ is not a regular member of the native or natural community in which it is found.
~~(B) it is of little economic value; or~~
~~(C) it colonizes disturbed habitats.~~
 - (5) Integrated Management System -- The term "integrated management system" means an ecologically based system for the planning and implementation of a program using an interdisciplinary approach to select a methods for preventing, containing or controlling an undesirable plant species...
 - (6) Interdisciplinary Approach -- The term "interdisciplinary approach" means an approach to making decisions regarding prevention, containment and control...
 - (6)(A) includes participation by personnel of Federal or State administrative agencies with experience in areas including ecology, environmental science, weed science, ...

(6)(B)(i) the most ~~efficient~~ ecologically sound and effective methods of preventing, containing or controlling the undesirable plant species.

(8) Noxious Plant – The term "noxious plant" means a plant or its propagules listed on any State or Federal noxious weed list. ~~seed, or part of a plant or seed with one of more of the following attributes.~~
Parts (8)(A)-(8)(D) are to be stricken.

(9) Undesirable Plant Species – The term "undesirable plant species" means plant species that are –

(9)(A) ~~of little economic, aesthetic, or nutritional value~~ highly destructive, competitive, and difficult to manage by cultural and chemical methods;
or

• Section 3. DEFINITIONS.

The following are to be added to the definitions section:

Control. – The term "control" means to preclude seed production.

Contain. – The term "contain" means to confine an undesirable plant species and its propagules to an identified area of infestation.

Prevention. – The term "prevention" means the process of forestalling the contamination of an area by an undesirable plant species. It includes those measures taken to forestall or hinder the introduction and establishment of a specific undesirable plant species in areas not currently infested with those plant species. Such measures emphasize creating ecological conditions that encourage desired plants and discourage undesirable plants. Such areas may be local, regional, statewide, or national in scope.

Suppression. – The term "suppression" means any cost effective and environmentally sound treatment that stresses or reduces undesirable plant species populations without the expectation of "control" (preclusion of all seed production) or "containment" (confinement to a specific geographical area).

• Section 4. MANAGEMENT OF UNDESIRABLE PLANT SPECIES

(a)(1) ~~designate a specific~~ all administrative offices and persons adequately trained in the management of undesirable plant species to develop and coordinate a program for the management of undesirable plant species on Federal land under the agency's jurisdiction and report to Congress every 5 years.

(a)(4) establish integrated management systems to prevent, control or contain undesirable plant...

(a)(5) ~~require that equipment (including road construction equipment, recreational vehicles, and farm or ranch equipment) and agronomic crops (including hay, alfalfa, straw, and other feed for livestock or wildlife, prior to entry onto Federal lands, be certified free of undesirable plant species under certification standards set by the Federal agency in consultation with appropriate Federal and State agencies; and require that all Federal field offices that administer a land base that has a potential for undesirable plant invasion establish and document strategies which emphasize the use of prevention and natural processes to manage undesirable species; and~~

While this is a reasonable course to pursue, it is more appropriate for Congress to mandate the establishment of a comprehensive program. Such a program should certainly include such measures, but should in no way be limited to them, nor should the establishment of such procedures alone be viewed as an adequate fulfillment of a mandate to establish an integrated management program.

(b)(1) and (b)(2) Effect on Permit Holders. -- These sections are to be deleted. For weed management programs to be effective all land must be properly managed.

* Section 5. COOPERATIVE AGREEMENTS WITH STATE ADMINISTRATIVE AGENCIES.

(b) Contents of Plan. -- A cooperative agreement entered into pursuant to subsection (a) shall --

(b)(1) prioritize and target undesirable plant species to be prevented, controlled or contained within a specific geographic area using the following priority and management emphasis system:

Priority 1: Undesirable plant species as yet unrecorded within a specific geographic areas, but with imminent potential for invasion. Management emphasis will be placed on exclusion from out-of-geographic-area sources and early detection.

Priority 2: Undesirable plant species whose distribution and population size within a specific geographic area are such that the species has not yet spread to the extent that unacceptable resource damage is occurring and all seed production can be reasonably precluded. Management emphasis will be placed on containment, control to the extent containment is achieved, and prevention of further spread.

Priority 3: Undesirable plant species whose distribution and

population size within a specific geographic area are such that the species has become naturalized and control is not possible. Management emphasis will be placed on suppression.

(b)(2) describe an integrated management system to be used to select a methods to prevent, control, or contain the targeted undesirable plant species; and

(b)(3) detail the means of implementing the selected methods, define the duties of Federal agency and the State agency in prosecuting ~~that~~ those methods and establish...

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Picloram

Picloram (4-amino-3,5,6-trichloropicolinic acid) is a systemic, persistent herbicide used for broadleaf weed and woody plant control, especially for rights-of-way. Produced by Dow Chemical Co. since approximately 1963, use of this pesticide by itself and in combination with other herbicides like 2,4-D (Tordon 101™) has been associated with a number of reports of human poisonings and extensive groundwater contamination. In fact, EPA designated picloram a "restricted use" pesticide (for use by certified applicators and those under their supervision only) because of regulatory concern that picloram is likely to contaminate surface and groundwater supplies.

Picloram is absorbed through the leaves and roots and circulates throughout plants, so that it is not possible to wash off residues. It poisons plants by replacing the plant growth hormone indoleacetic acid in new growth, where it accumulates. Picloram kills by inhibiting protein synthesis in the plant so that it cannot make new tissues. However, most grasses are resistant to picloram. A 4:1 mixture of 2,4-D and picloram herbicides was once used as a jungle defoliant in Viet Nam, where it was known as Agent White.

Picloram is relatively non-toxic (on an acute basis) to mammals. The reported rat oral LD50=8200 mg/kg. However, picloram is known to be irritating to human skin, and there have been numerous reports of other symptoms following human exposures, including: sore eyes and throat, itching and burning skin, skin rashes, persistent headaches, fatigue, deterioration

of memory and vision, numbness in hands and feet, and even joint problems that mimic arthritis. Some of the reported symptoms persisted for years. Mixtures of 2,4-D and picloram seem to be more toxic than either chemical alone. Mammalian metabolism is rapid (excretion of picloram fed to dogs was almost complete in 2 days), and picloram does not bioaccumulate.

A particularly controversial point is whether or not picloram can cause long-term health effects, such as cancer. EPA believes that the data base is too incomplete for it to formulate either a positive or negative opinion. (EPA required repeat animal cancer tests to be run in 1985). However, there are those who disagree with this position. Dr. Melvin Reuber, an independent pathologist, reviewed a study conducted by the National Cancer Institute (NCI), and found a high incidence of malignant liver and endocrine tumors in rats, and tumors of the spleen in mice. He also found a high incidence of dose-related testicular atrophy in rats and mice. (EPA does not agree that the studies demonstrated positive chronic effects.) In the 1985 EPA Registration Standard, EPA ordered manufacturers to limit the concentrations of carcinogenic contaminants hexachlorobenzene and nitrosamines (in amine salt formulations) to 200 ppm and 1 ppm, respectively. EPA's reviews of the existing data found no evidence of reproductive problems or birth defects in animal tests.

This chemical is extremely persistent in soil, especially in cold, dry climates, and is only slowly degraded by microbes, even under the most favorable conditions. The reported soil half-life (T_{1/2}) ranges from 1-13 months de-

pending on conditions. For example, dissipation is slow under conditions of low soil moisture, and in clay or sandy loam soils with low organic content. Apparently, the major degradation pathway is photodegradation (exposure to light), and the rate of this process is also dependent on conditions. For example, T_{1/2}= 5 days in one-inch deep containers, whereas in 12-foot deep non-circulating containers, T_{1/2}= 60 days.

Examination of six chemical properties predictive of a chemical's ability to pose a threat of groundwater contamination found that five were exceeded (data was lacking for the sixth parameter). The water solubility and mobility of picloram through soil is high. Incidents of water contamination have been reported repeatedly, for example, in the Squaw Creek area of Wyoming, at Turtle Mountain Indian reservation in North Dakota, at commercial greenhouses in Kimbal, NE, repeatedly in West Virginia (where hearings were held on this issue in 1983), and in Ontario, Canada. As little as 1 part-per-billion in water was found to be enough to permanently damage plants. Also, because of its high persistence, picloram continues to appear in soil leachate for a long period of time, sometimes as long as several years.

Picloram is considered by EPA to be moderately toxic to fish, but most studies have found it to be relatively non-toxic to birds, aquatic invertebrates, and bees. EPA's Registration Standard on picloram stated, "that low concentrations will adversely affect the rate of yolk sac absorption and growth of [lake trout] fry."

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chemicalWatch factsheet
picloram bibliography

- Frank, R., et al. (1979). Herbicide contamination and decontamination of well waters in Ontario, Canada, 1969-78. *Pest Monitoring J.* 13:120-127.
- Harrison-Biotech. (1983). Control of Vegetation on Utility and Railroad Rights-of-Way. Prepared for the Commonwealth of Massachusetts Generic Environmental Impact Report. Cambridge, MA.
- Reuber, M.D. (1981). Carcinogenicity of picloram. *J. Toxicol. Environ. Health* 7:207-222.
- Roche, E. (1980). Letter from E. Roche, Dow Chemical Co., to George Hittle, WY Department of Agriculture. November 3, 1980.
- Schneider, K. (1982). "Agent White," *Inquiry Magazine*, March 15, 1982.
- Shearer, R.W. (1983). Affidavit on Picloram and 2,4-D. Issaquah, WA.
- Thomson, W.T. (1984). Agricultural Chemicals: Herbicides. Thomson Publications, Fresno, CA.
- U.S.-EPA. (1985). Guidance for the reregistration of pesticide products containing picloram. Office of Pesticide Programs. Washington, DC.
- U.S.-EPA. (1982). Picloram fact-sheet. Office of Pesticides & Toxic Substances. Washington, DC.
- U.S.-EPA. (1976). Herbicide contamination in water supplies, Kimball, NE. [EPA-330/2-76-037]. National Enforcement Investigations Center-Denver, CO and EPA Region VII- Kansas City, MO.
- West Virginia Department of Agriculture. (1983). News Release: "Sale of granular picloram stopped until new regulations are promulgated." October 26, 1983, Charleston, WV.
- West Virginia Department of Agriculture. (1983). Transcript of a public hearing concerning the use of picloram herbicides in West Virginia, October 6, 1983. Charleston, WV.

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2,4-D

Adding to public concern over dioxin and nitrosamine contamination in 2,4-dichlorophenoxy acetic acid (2,4-D), a recent National Cancer Institute (NCI) study shows that the chemical can cause cancer in exposed humans. The findings were released on the heels of a manufacturers' study submitted to EPA in June indicating the herbicide, which is widely used in agriculture, forestry and urban settings, can cause rare brain tumors (astrocytomas) in rats (see *PAY*, August, 1986). Both studies indicate a need for closer examination of other commonly used phenoxies such as dichlorprop, mecoprop (MCP), MCPA and 2,4,5-T (banned in the U.S.).

The NCI study, conducted by Drs. Sheila Hoar and Aaron Blair, studied all cases of diagnosed cancer among Kansas farmers between 1976 and 1982. According to the study, farmers who were exposed to 2,4-D for 20 or more days per year had a sixfold higher risk of developing non-Hodgkins lymphoma than non-farmers, while farmers who mixed or spread the herbicide had an eightfold higher risk of developing the tumor. Signifi-

cantly, the researchers noted that farmers who took precautions to minimize their exposure were at lesser risk.

In addition to the most recent studies, a bioassay conducted by the Food and Drug Administration found increased incidences of lymphosarcoma (malignant tumors) in both male and female rats, breast tumors in female rats and reticulum cell sarcoma (malignant blood cell tumors) in male rats exposed to 2,4-D. The latter were also found in mice exposed to the isooctyl salt of 2,4-D. Scientists consider 2,4-dichlorophenol, a major breakdown product, to be a cancer promotor. At high doses, reproductive toxicity has been observed in animals, consisting of decreased survival and skeletal malformations.

According to a 1982 EPA manual, 2,4-D is irritating to the skin, eyes and mucous membranes, and, since it is easily absorbed dermally or by inhalation, can cause toxic injury to liver, kidney, muscle and brain-tissues. Acute symptoms of 2,4-D exposure include: chest and abdominal pain, vomiting, dizziness, and muscle twitching, tenderness or stiffness. Seemingly

minor dermal exposures have been known to cause peripheral neuropathy (nerve damage).

Industry reports show that amine salt formulations of 2,4-D may become contaminated during synthesis with up to several hundred parts-per-billion of nitrosamines, known to be potent carcinogens. Three forms of dioxin have been identified in 2,4-D (di-, tri- and tetrachlorodibenzo-p-dioxins). These forms, however, are not as deadly as the most toxic and renowned form, "Dioxin" - 2,3,7,8-TCDD.

A systemic herbicide, 2,4-D is easily absorbed by foliage and translocated throughout the treated plant, which dies in 7-14 days. Phenoxo acid herbicides-like 2,4-D mimic the action of natural plant growth regulators know as auxins, causing treated plants to literally grow themselves to death. In soil, 2,4-D residues usually dissipate within a month (primarily due to microbial degradation). 2,4-D is known to leach from soils low in clay or organic content and in cool, dry, nutrient-poor soils. Under these conditions, residues may persist for several months.

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chemicalWatch factsheet bibliography

Blondell, J. (1986). [Compilation of reviews by independent scientists (D.P. Morgan, L.F. Burmeister, B. Macmahon, & M.S. Linet) of Hoar, S., et al., 1986.] Hazard Evaluation Division, Office of Pesticide Programs. Washington, DC.

CA Department of Health Services. (1980). "2,4-D: Evaluation of the human health effects." Berkeley, CA.

Casey, P.H., et al. (1984). "Severe mental retardation and multiple congenital anomalies of uncertain cause after extreme parental exposure to 2,4-D." *J. Pediatrics* 104:313-314.

"2,4-D produces rare brain tumor in male rats, EPA officials note," *Pesticide & Toxic Chemical News*, June 25, 1986.

Hardell, L. & M. Eriksson. (1988). "The association between soft tissue sarcomas and exposure to phenoxyacetic acids: A new case-referent study." *Cancer* 62:652-656.

Harrison-Biotech. (1983). "Control of vegetation on utility and railroad rights of-way." (Prepared for the Commonwealth of Massachusetts Generic Environmental Impact Report.) Cambridge, MA.

Hoar, S., et al. (1986). "Agricultural herbicide use and risk of lymphoma and soft-tissue sarcoma." *J. National Cancer Institute* 75:1141-47.

Hoar-Zahn, S., et al. (1988). "A case-control study of non-Hodgkin's lymphoma and agricultural factors in eastern Nebraska." (Abstract).

"Jury charges Dow \$1.5 million for 2,4-D-caused death of forest worker," *J. Pesticide Reform* 7(4):30.

Morgan, D.P. (1982). Recognition and Management of Pesticide Programs Environmental Protection Agency. Washington, DC.

Municipality of Metropolitan Seattle. (1980). "Literature reviews of four selected herbicides: 2,4-D, dichlobenil, diquat and endosulfan." Seattle, WA.

FBI/Gordon. (1982). Report to EPA: Analysis for N-nitroso compounds in four 2,4-D amine salt formulations. Washington, DC.

U.S. Department of Agriculture. (1984). Pesticide Background Statements. Vol. 1. Herbicides Forest Service. Washington, DC.

U.S.-EPA. (1985). Draft health advisory: 2,4-D. Office of Drinking Water, Washington, DC.

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FOSAMINE AMMONIUM

Manufactured by Dupont, fosamine ammonium (Krenite™) has been registered by EPA since 1979 for non-crop uses and conifer release applications in forestry. It is a post-emergent pesticide used for the control of woody plants. One formulation contains a surfactant (Rennex 31™ or poly-oxyethylene tridecyl ether) to aid plant leaf absorption of the pesticide, and another product formulation label also recommends the addition of a surfactant.

Since Krenite™ is not registered for use on cropland, EPA does not require the manufacturer to perform or submit carcinogenicity bioassays or other chronic health effects data, prior to registration, consequently no information is available on these crucial points. However, in 1984, EPA issued a data call-in for environmental fate and potential for groundwater contamination data, as well as for limited chronic toxicity data.

In general, the acute toxicity

of Krenite™ has been found to be quite low for mammals; birds, fish, bees, aquatic invertebrates, etc. Oral and dermal LD₅₀'s in animal tests are all in the gram/kg range. Of several mutagenicity assays submitted to EPA for review, only one, a test in cultured Chinese Hamster Ovary cells, showed chromosomal aberrations. Researchers have found that low concentrations of fosamine ammonium sprayed on chicken and quail eggs induced dose-dependent skeletal abnormalities in the embryos. A rat study for birth defects was negative.

The major metabolite of Krenite™ is carbamoyl phosphoric acid (CPA). Animals typically excrete both unchanged fosamine ammonium and CPA in urine and feces within 72 hours of exposure.

Limited information on environmental fate is available. Fosamine ammonium is highly water soluble and shows no tendency to bioaccumulate, and CPA is readily susceptible to mi-

crobial degradation. Half-lives in soil depend on the soil clay content and the availability of microbes, but in most cases range from 1 week to 10 days. In water, degradation depends on pH, proceeding more rapidly under acidic conditions (pH<7.0). Still, at pH7 fosamine ammonium was very stable, with only 3% degraded after 4 weeks.

In a recent Final Environmental Impact Statement, the Region 6 Forest Service concluded that they would not use fosamine ammonium in their programs because the data, where they existed, were of such poor quality that they were unable to adequately quantify its risks.

Bibliography on reverse

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chemicalWATCH factsheet
Fosamine Ammonium bibliography

Dupont. (1973). Environmental chemistry review for ammonium ethyl carbamoylphosphonate (Krenite™). Exp-352. Wilmington, DE.

Envirologic Data, Inc. (1984). Risk Assessment of Fosamine Ammonium. Prepared for ME Department of Transportation and ME Board of Pesticides Control. Portland, ME.

Lutz-Ostertag, Y. (1983). Toxic and teratogenic effects of the ammonium salt of fosamine on the development of quail and chicken embryos. *Arch. Anat. Microsc. Morphol. Exp.* 72:77-85.

Schneider, H. (1979). Toxicological information: fosamine, ammonium salt, ammonium ethyl carbamoylphosphonate. Dupont Haskell Laboratory for Toxicology and Industry Medicine. Wilmington, DE.

U.S. Department of Agriculture. (1988). Managing competing and unwanted vegetation. Final Environmental Impact Statement. Forest Service. Pacific Northwest Region.

U.S.-EPA. (1985). Toxicology One-Liner #465G: Fosamine. Office of Pesticide Programs. Washington, DC.

U.S.-EPA. (1984). Data Call-In notice for chronic toxicological and ground water data for fosamine ammonium. Office of Pesticide Programs. Washington, DC.

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Glyphosate

Roundup™ and Rodeo™, two Monsanto products containing the active ingredient glyphosate (N-phosphono-methyl glycine), are enjoying ever wider use as non-selective herbicides, particularly against perennial plant species.

Roundup™, registered in 1972, is now extensively used in agriculture, on rights-of-way and in forestry, while Rodeo™ is formulated for aquatic use. Treated plants translocate the systemic herbicide to their roots, shoot regions and fruit, where it interferes with the plant's ability to form aromatic amino acids necessary for protein synthesis. Treated plants generally die in two to three days.

According to a June, 1986 Registration Standard, EPA considers glyphosate to be relatively non-toxic to most forms of life. Because glyphosate is water-soluble, it shows little tendency to bioaccumulate and is quickly excreted, for the most part unchanged. However, glyphosate does cause eye irritation in animal tests, and there have been reports of skin irritation among workers handling it, thought to be related to the surfactant added to the Roundup™ formulation. Monsanto has never publically identified this surfactant (which is used to help the pesticide penetrate the waxy cuticle of target

plants) and has reportedly switched to a different, also unidentified one now. (The identity of "inert" ingredients is considered "trade-secret" information and is thus not disclosed on the label.) Researchers have expressed concern about the toxicity of the surfactant inert ingredient, which is more toxic than glyphosate itself if ingested or if the skin is exposed. Data indicate that glyphosate does not cause mutagenic teratogenic (birth defects), or reproductive effects in animals.

There has been controversy recently as to whether glyphosate causes a slightly increased incidence of benign kidney tumors in mice at high doses, and tumors of the thyroid and testes in rats. EPA has reported that technical glyphosate is contaminated with "less than 100 parts-per-billion" of N-nitroso-glyphosate (NNG), a by-product of synthesis. Many N-nitroso compounds are animal carcinogens. EPA is not, however, requiring further investigation of the toxicological effects of NNG, because it does not typically require data on N-nitroso contaminants present at levels of less than 1 part-per-million. EPA's Scientific Advisory Panel reviewed these data, and, finding them unconvincing, recommended that glyphosate be classified as a Class D carcinogen (one for which

the evidence of carcinogenicity is inconclusive). EPA is requiring Monsanto to repeat both studies by the end of 1990.

According to the Registration Standard, glyphosate usually persists for only short periods of time in water or in soils, where glyphosate adsorbs tightly to organic material. In fact, researchers report that the efficacy of glyphosate was reduced when it was mixed with any of seven other herbicides (a common practice), with clay particles, or with the minerals in tap water. Although it shows little tendency to photo-degrade, glyphosate residues are susceptible to microbial degradation. Half-lives in soil are usually less than two weeks, although residues have been known to persist for months in anaerobic soils deficient in the necessary microbial populations. EPA notes many data-gaps in the area of environmental fate. One unknown is the length of time it may take for residues in treated fields to dissipate, before it is safe to rotate in glyphosate-sensitive crops.

Glyphosate residues are difficult to detect in environmental samples and most laboratories are not able to perform this service because of the lack of generally available, economically feasible methodology.

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National Coalition Against the Misuse of Pesticides (NCAMP)
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chemicalWatch factsheet bibliography

Envirologic Data, Inc. (1984). Risk assessment of glyphosate. Prepared for the ME Dept. Transportation and ME Pesticide Control Board. Portland ME.

Khan, S. & J.C. Young. (1977). N-nitrosamine formation in soil from the herbicide glyphosate. *J. Agric. Food Chem.* 25:1430-32.

"Glyphosate Category D carcinogen, Scientific Advisory Committee says," *Pesticide & Toxic Chemical News*, February 19, 1988.

"Glyphosate, paraquat oncogenicity pointed out to Drug Enforcement Agency (DEA) by EPA's Office of Pesticide Programs (OPP)," *Pesticide & Toxic Chemical News*, August 14, 1985.

Harrison-Biotech, Inc. (1983). Control of Vegetation on Utility and Railroad Rights-of-Way. Prepared for the Commonwealth of MA as a Generic Environmental Impact Report. Cambridge, MA.

Sawada, Y., et al. (1988). "Probable toxicity of surface-active agent in commercial herbicide containing glyphosate." *The Lancet*, February 6th.

Thomson, W.T. (1984). Agricultural Chemicals: Herbicides. Thomson Publications, Fresno, CA.

U.S.-EPA. (1986). Guidance for the reregistration of pesticide products containing glyphosate as the active ingredient. Office of Pesticide Programs. Washington, DC.

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Dicamba

The herbicide dicamba (Banvel™, Brush Buster™), originally registered by Velsicol Chemical Corp. in 1967, has attracted attention because of the toxicity of its contaminants, both dioxin and nitrosamines, and its propensity to leach through soil. Commonly used on corn to control the Canada thistle, it is also used on turf, rights-of way, pastures, seed-crops, asparagus, and sugarcane to control woody plants and broadleaf weeds. Dicamba is now produced by Sandoz Corp. of Switzerland, which bought Velsicol's agricultural chemicals division last year.

Dicamba is absorbed by the leaves and translocated throughout the plant, where it exerts an auxin-like growth regulatory effect. Soybeans are extremely sensitive to dicamba and toxic effects have been shown to occur not only from drift, but even from volatilization from the surfaces of treated leaves in neighboring fields.

According to a 1983 Regis-

tration Standard, Dicamba is of low acute toxicity by either the oral or dermal routes, but is quite irritating to the eyes. Dicamba is rapidly excreted in urine, mostly as the unchanged compound and as 3,6-dichloro-2-hydroxybenzoic acid, also known as 3,6-dichloro-salicylic acid. Studies indicate that residues do not bioaccumulate in biological systems. Based on available industry data, EPA does not consider dicamba to be either a reproductive toxin or to cause birth defects, and preliminary short-term testing has not indicated any mutagenic activity.

A major problem with dicamba is its extreme mobility in soils, regardless of organic matter or clay content, and high water solubility. Dicamba residues are both quite persistent (2 months to 1 year) and able to move vertically in the soil column. In fact, USDA found that dicamba was the most mobile of forty herbicides evaluated, a warning that dicamba would likely contaminate groundwater.

EPA has identified a number of health and safety data gaps, which include chronic testing, carcinogenicity, environmental fate, exposure assessment, and certain residue tests, most of which are due by September, 1987. The Registration Standard noted that the manufacture of dicamba has the potential to produce dichlorodibenzo-p-dioxin (DCDD), and levels of up to 50 parts-per-billion (ppb) have been found. No 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) residues, the ultra-toxic form of "Dioxin" found at Times Beach, MO, have been found down to a level of detection of 2 ppb, and EPA says that its presence would not be expected.

Another contaminant of the amine formulations of dicamba is the carcinogen dimethylnitrosamine (DMA). EPA says that less than 1 ppm is expected to contaminate dicamba, and that the risk level to people is extremely low at that level, on the order of 10⁻⁷ to 10⁻⁸.

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chemicalWatch factsheet bibliography

Altom, J.D. & F.F. Strizke. (1973). "Degradation of dicamba, picloram, and four phenoxy herbicides in soils." *Weed Science* 21:556-560.

Dicamba:Proposed tolerance. [49 FR 19683], May 9, 1984.

Glass, R.L. & W.M. Edwards. (1979). "Dicamba in lysimeter runoff and percolation water." *J. Agric. Food Chem.* 27:908-909.

Helling, C.S. (1970). "Movement of S-triazine herbicides in soils." *Residue Reviews* 32:175-210.

Scifres, C.J. (1977). "Herbicides and the range ecosystem: Residues, research and the role of rangemen." *J. Range Mgmt.* 30:86-90.

Thomson, W.T. (1984). Agricultural Chemicals: Herbicides. Thomson Publications, Fresno, CA.

U.S. Department of Agriculture. (1984). Pesticide Background Statements Handbook No. 633: I. Herbicides. Forest Service. Washington, DC.

U.S.-EPA. (1983). Guidance for the reregistration of pesticide products containing dicamba as the active ingredient. Office of Pesticide Programs. Washington, DC.

Testimony
of Dr. Faith T. Campbell,
Representing the
Natural Resources Defense Council

before the Subcommittee
on
Agricultural Research and General Legislation
Committee on Agriculture
U.S. Senate
March 28, 1990

Mr. Chairman, the Natural Resources Defense Council (NRDC) appreciates the invitation to appear before the Subcommittee on Agricultural Research and General Legislation today to discuss the need for a national program to control invasive exotic or alien plant species. We will focus on the need to prevent such plants from swamping natural communities and contributing to the reduction of natural biological diversity.

Alien plants, introduced from abroad, have become major components of our flora. Over 20% of plants listed in Roger Tory Peterson's popular Field Guide to Wildflowers are exotic.¹ Some such plants threaten America's biological integrity because they smother natural communities. At least two dozen species of invasive plants are threatening protected natural areas on the United States mainland. Several of these species are described briefly in Appendix A.

In a survey carried out by the National Park Service (NPS), introduction of or invasion by alien plants was reported to be a threat affecting 88 National parks in all parts of the country. In fact, invasion by alien plants was the most widely reported threat to our National parks.² In conjunction with introduced animals, alien plants were found to be changing parks' ecosystems.

As the survey report indicated, the problem is nation-wide. Researchers have cited examples from Rocky Mountain National Park in Colorado,³ Great Smoky Mountains National Park in North Carolina and Tennessee, Everglades National Park in Florida, Hot Springs National Park in Arkansas, Mound City National Monument

¹Claire Sawyers, "Native Plants Under Siege," Garden, March/April 1989

²Natural Resources Assessment and Action Program Report, Natural Resources Programs, National Park Service, 1988 p. 31

³Natural Resources Assessment and Action Program Report, Natural Resources Programs, National Park Service, 1988 p. 26.

in Ohio, and Cumberland Gap National Historical Park on the Virginia-Kentucky border.⁴ The National Park Service believes it will cost \$30 million to control alien plant infestations -- money which the NPS does not currently have.

While the threat has been documented to be nation-wide, the worst problems are found in the National parks in Hawai'i. Large parts of Hawaii Volcanoes, Haleakala, and Kaloko-Honokohau NPs are completely dominated by alien plant species.⁵ The NPS must use labor-intensive, expensive techniques, primarily regular "sweeps" by teams of four to six trained people through extremely dense vegetation. The teams must find every seedling of the target species to be successful -- adding to the time and cost involved. These labor-intensive methods are obviously inadequate. Biological control agents promise more success. Therefore, NRDC has proposed construction of a secure laboratory for testing disease pathogens for use against these invasive plants.

While the Hawaiian ecosystems are particularly fragile, more "ordinary" ecosystems are also vulnerable. In Illinois, alien plants are considered second to land clearing as a threat to natural areas in the state.⁶

"Without an active and effective control program it seems possible that every marsh and open wetland in northern Illinois could be lost to purple loosestrife and smooth buckthorn; every mesic prairie in Illinois could be overrun by giant teasel and white sweet clover; and every forest in southern Illinois could eventually have its ground cover replaced by Japanese honeysuckle and purple winter creeper."⁷

The Illinois Division of Natural Heritage spent \$5,419 on exotic species control in 1985, \$19,842 in 1987; the Lake County Forest Preserve District spent \$14,800 on purple loosestrife alone in

⁴Claire Sawyers, "Native Plants Under Siege," Garden, March/April 1989

⁵The most widespread and damaging alien plants there include Myrica faya (Firetree), Passiflora mollissima (Banana poka), Rubus ellipticus (Yellow raspberry), R. glaucus (Raspberry), R. argutus (Blackberry), Andropogon glomeratus (Bush beardgrass), Andropogon virginicus (Broomsedge), Melinis minutiflora (Molasses grass), Pennisetum setaceum (fountain grass), and Psidium cattleianum (strawberry guava).

⁶John E. Schwegman, "Exotic Invaders," Illinois Outdoor Highlights, March 1988

⁷John E. Schwegman, "Exotic Invaders," Illinois Outdoor Highlights, March 1988, p. 9.

1987; Citizens for Conservation at Tower Lake paid \$17,000 for removal of smooth buckthorn from Tower Lake Fen.

The Nature Conservancy is also fighting invasive plants damaging its reserves. On the American mainland, the threat comes from such species as two weedy exotic honeysuckle species, two buckthorns, and the common periwinkle.⁸

Unfortunately, the threat posed by invading plants is not widely perceived for three reasons. First, most people judge an area's biological value only by the presence of large vertebrates, and many exotics provide food or shelter for these animals. Second, the exotics' takeover occurs more slowly than bulldozing. Finally, most people cannot recognize either native or exotic plant species, so they do not notice the change.⁹

Biological control is the least intrusive method for controlling invasive aliens in natural areas. It is highly specific, has little effect on non-target plants; causes no pollution; and is economical to use.¹⁰

The United States has a biological program to control weeds, overseen by Technical Advisory Group for the Introduction of Biological Control Agents for Weeds (TAGIBCAW) of the Animal and Plant Health Inspection Service (USDA/APHIS). TAGIBCAW is made up of 13 members -- weed scientists, entomologists, plant pathologists, botanists and wildlife scientists from the Agricultural Research Service (ARS), APHIS, Forest Service, Cooperative State Research Service, Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Reclamation, Corps of Engineers, National Plant Board, Environmental Protection Agency, and Weed Science Society of America. TAGIBCAW provides its opinion on the balance between beneficial and harmful values of any "weed" under consideration for control; reviews initial overseas tests of candidate control organism; and recommends whether the control organism should be introduced into the U.S. under quarantine and whether any additional tests should be conducted.

Actual introduction under quarantine requires an APHIS permit, with state approval. APHIS also approves personnel and procedures for further testing and production of pure colonies.

⁸Claire Sawyers, "Native Plants Under Siege," Garden, March/April 1989

⁹John E. Schwegman, "Exotic Invaders," Illinois Outdoor Highlights, March 1988

¹⁰C. Jack DeLoach, "Past Successes and Current Prospects in Biological Control of Introduced Weeds in the United States and Canada," presented at the 16th Annual Natural Areas Conference, October 17-20, 1989.

Finally, TAGIBCAW reviews results the results of those tests and recommends whether to release the organism into the environment. This release also requires permission from state agriculture departments and APHIS¹¹

NRDC believes that this program has worked, but that it has two major flaws:

*because of the traditional focus on agriculture and the makeup of the responsible agencies and committees, the program has not acted to control the crisis posed by invasive plants which affect primarily natural areas rather than agricultural lands

*the program lacks sufficient funds to carry out research on the significant number of high-priority invasive plants

In our view, an ideal program to control invasive plant species which threaten natural areas and agricultural lands should have the following components:

- 1) Scientists should define target plants ("weeds") based on clearly defined criteria, with opportunity for public comment. The draft Daschle bill comes closest to meeting this standard.
- 2) The focus should be on exotic or alien species, not species native to North America. S. 1200 includes the concept of a plant species which is "not a regular member of the native or natural community in which it is found;" but it combines it with other criteria which are extraneous to a scientific definition of alien species and which are unacceptably broad from our perspective. We suggest instead the following definition: all species of plants not naturally occurring, either presently or historically, in any ecosystem of the United States (including Puerto Rico, Samoa, the U.S. Virgin Islands, and Guam).
- 3) The control program should emphasize species-specific measures such as biological control.

Biological control methods allow us to take advantage of the hordes of insects, mites, nematodes, diseases, and other pests which attack every plant species. These have usually been left behind when a plant species invades a new continent (North America) or island (Hawai'i), and native insects, diseases, and other organisms often do not attack invading plant species.¹² Their absence explains why the invasive plant species can spread to the extent that it reaches pest status.

¹¹from John J. Drea, Beneficial Insects Laboratory, PSI, ARS, presented to Natural Areas Association in October 1989

¹²from John J. Drea, Beneficial Insects Laboratory, PSI, ARS, presented to Natural Areas Association in October 1989

The introduction of natural enemies is well-suited for natural areas because the cost (of research and distribution of organisms) is independent of the size of the area infested, so in effect it decreases as area increases. The benefit:cost ratios for successful projects typically exceed 50:1.¹³ When successful, biological control is permanent and requires little additional funding.¹⁴

Recently, scientists have also explored use of natural enemies to cause stress to the pest species (rather than kill it outright), so as to make it more susceptible to chemical pesticides, plant competition, or other control methods. This approach has the advantage of affecting only the specific area treated, so it is more easily halted if results are counter to expectations. However, this approach is more costly because it requires repeated treatments over time. Therefore, it is unlikely to be economical in areas of low economic return, including natural areas.¹⁵

However, we should not understate the difficulties associated with use of biological control methods. An effective program requires substantial initial capital expenditure to establish and maintain the research programs on which it is based. Furthermore, eight to ten years of work are necessary to bring a control agent to the point of widespread application. First, researchers must search the plant species' native range to find insects or pathogens that appear to retard the species' growth there. These must be evaluated, usually in the foreign country, to ascertain their effectiveness. Then the proposed control organism must be tested to ensure that it will not become a pest itself by attacking food crops, range and forage plants, plants of aesthetic value, endangered plant species, or other native plant species closely related to the invasive weed. This screening is crucial; it represents the longest portion of research. "The importance of good quarantine facilities cannot be over-emphasized. . . . [T]he escape of an unwanted organism from a poor quarantine facility could lead to a disaster of major significance for the country involved and for its neighboring

¹³C. Jack DeLoach, "Past Successes and Current Prospects in Biological Control of Introduced Weeds in the United States and Canada," presented at the 16th Annual Natural Areas Conference, October 17-20, 1989.

¹⁴John J. Drea, Beneficial Insects Laboratory, PSI, ARS, presented to Natural Areas Association in October 1989 p. 7 of manuscript for NAA Journal.

¹⁵C. Jack DeLoach, "Past Successes and Current Prospects in Biological Control of Introduced Weeds in the United States and Canada," presented at the 16th Annual Natural Areas Conference, October 17-20, 1989.

states, as well as for the science of biological control. Fortunately this has not happened to date."¹⁶

In recognition of the role of biological controls, NRDC has testified in favor of construction of a pathogen quarantine facility in Hawai'i, at a cost of about \$1 million, to counter the tide of alien plant invasions in that state. The current laboratory at Hawaii Volcanoes National Park is certified as secure only for insects, not for disease pathogens. The state facility outside Honolulu has not been certified by the U.S. Department of Agriculture; is located at sea level, which has a hotter, more humid, climate than that present in the parks; and is scheduled to be dismantled. While the current laboratory has had some success in developing insect pests to attack invasive alien plants found in the parks, these insects have not proved hardy once released into the environment. Disease pathogens -- viruses and fungi -- are expected to be more reliable. However, disease pathogens must be tested in a secure laboratory before release in order to ensure that they will not also attack native plants or agricultural crops.

When biological control is not effective, NRDC supports the use of carefully controlled, site-specific applications of broader-effect methods, including herbicides. These methods must be used in full compliance with applicable laws, including the Federal Insecticide, Fungicide, and Rodenticide Act, National Environmental Policy Act, and the Endangered Species Act.

4) The law should be amended to provide Federal authority to ban importation of invasive plants and to control their distribution once they are in the country. Restrictions on imports should go beyond species already designated as noxious weeds. It should also encompass additional exotic plants unless they have been thoroughly evaluated and certified as non-invasive. In order to carry out such a program, APHIS will need new authority as well as a increased funding, staff, computer support, etc.

Federal law should also outlaw sale or distribution of plant species designated as noxious weeds; such plants should be subject to seizure.

5) It should be public policy to control or eradicate designated "noxious weeds" on federal lands. S. 1200 so provides.

¹⁶John J. Drea, Beneficial Insects Laboratory, PSI, ARS, presented at the 16th Annual Natural Areas Conference, October 17-20, 1989, p. 7 of his manuscript for the Natural Areas Journal; similar statements are made by C. Jack DeLoach, "Past Successes and Current Prospects in Biological Control of Introduced Weeds in the United States and Canada," presented at the 16th Annual Natural Areas Conference, October 17-20, 1989.

e) Finally, an effective program must include a broad effort to educate the public about the threat posed by invasive plants generally and species specific to their own areas.

All these programs should be carried out in cooperation with the states, specifically incorporating their natural resource agencies in addition to their departments of agriculture.

Turning to the bills now under consideration, their greatest weakness is that they don't provide sufficient coordination and funds to establish the necessary research and development program. It must be a federal responsibility to establish and fund biocontrol research facilities because of costs and interstate impacts of both the problems (weeds) and the solutions (insects and pathogens). Senator Daschle's discussion draft would require APHIS to compile list of species for which funding is not yet available. This list at least provides a basis for future action by Congress or the Administration.

Our second criticism is that the bills are too narrowly focused on "weeds" affecting agriculture, not those damaging natural ecosystems. Senator Daschle's draft does add "natural ecosystems" to the list of impacted sites, but unless the Congress provides specific guidance and alters the makeup of responsible agencies and committees, the almost exclusive focus on agricultural pests will continue.

On the other hand, if the bills are to apply to non-agricultural land, the definitions of noxious weeds is far too broad. S. 1200 includes in its definition of "noxious plant" a native species that has "little economic aesthetic, or nutritional value", "colonizes disturbed habitats", or is parasitic. This definition ignores the role that all species play in their native ecosystems.

Appendix A
Some Invasive Alien Plants Threatening Natural Areas

kudzu Pueraria lobata; Japanese origin:

introduced as ornamental in 1876; high nutritional value for livestock; legume which restored soil nitrogen; aggressive nature known, but didn't begin excessive spread until Soil Conservation Service (SCS) planted 73 million seedlings beginning in 1935 to control soil erosion; by 1981, kudzu covered 7 million acres (nearly 11,000 square miles - area the size of Belgium)

in 1953, USDA dropped kudzu from its list of acceptable cover crops; in the 1960's, USDA sponsored research on eradication methods; it used highly toxic herbicides which rendered land unfit for crop planting for 2 years; these treatments decreased kudzu-dominated crop acreage by more than 80% by 1970; herbicides are also used in forests, where several applications are required; this approach is risky because the herbicide easily enters water bodies

kudzu is now found as far north as New York and Massachusetts¹⁷

purple loosestrife Lythrum salicaria:

spread began in 19th century, recently accelerated, apparently as result of planting as ornamental; it is of virtually no value to wildlife, crowds out important wildlife food plants such as cattails and bulrushes, and endangered wetland orchids; now illegal to plant in Illinois¹⁸

since 1940's, spreading at rate of about 645 km² per year; now reaches from New Brunswick to South Carolina, from British Columbia to California; annual cost of infestations to wildlife and agriculture estimated to be \$45 million¹⁹

research on control agents began as result of working-level contacts between a FWS refuge manager and ARS research

¹⁷Ruth M. Watson, "The Green Menace Creeps North," Garden, March/April 1989

¹⁸John E. Schwegman, "Exotic Invaders," Illionois Outdoor Highlights, March 1988

¹⁹Daniel Q. Thompson, USFWS, presentation at the 16th Annual Natural Areas Conference, October 17-20, 1989

scientist; in 1980, an interagency group approved the species as a candidate for biological control, but FWS funds were cut sharply; a Congressional add-on to the Interior Department appropriation in 1987 permitted work to begin in earnest.²⁰

multi-flora rose Rosa multiflora:

also promoted by SCS in 1930's for soil erosion control and as living fence; by 1950's, recognized as out of control; it is now classified as a noxious weed by New Jersey, Iowa, Illinois, Ohio, and WestVirginia

tamarisk Tamarix chinensis and T. ramosissima soaks up water:

in arid Southwest, soaks up water supplies, drying springs and small marshes and depriving wildlife of needed water;²¹ tamarisk is of much less value to wildlife than native species, increases soil salinity, narrows and blocks stream channels;

garlic mustard Alliaria petiolata:

from Europe; spreading at alarming rate in northern 3/5 of Illinois - rapidly replacing native wildflowers; severe infestations in 7 river drainages; Illinois Nongame Wildlife Conservation Fund made \$11,000 available for research into control methods; ultimate solution will be biological control.²²

autumn olive Elaeagnus umbellata:

first mass-planted in 1960's; by 1981, widespread dense populations (up to 14,000 plants per acre) in east-central Illinois; West Virginia outlawed sale and planting as a noxious weed in 1976

²⁰Ibid.

²¹Claire Sawyers, "Native Plants Under Siege," Garden, March/April 1989

²²John E. Schwegman, "Exotic Weed Crisis," Illinoiensis, Vol 5, #2, pp.2-3

"burning bush" Euonymus alata:

admired for flaming fall colors and corky winged stems, so it is planted along highways; within six years, had spread to 6 counties in Illinois; within 10 years, 1 colony doubled in number, eventually outnumbering all other woody species combined by 10 to 1; up to 60,700 seedlings per acre²³

crown vetch:

planted on steep roadsides, where, despite claims, it does not halt gully erosion; its seeds are spread by mammals which eat it; the species poses a serious threat to native vegetation of dunes along Lake Michigan and prairies throughout Illinois, where it smothers native plants, including endangered species and wildlife cover; still legal to plant in Illinois²⁴

²³Claire Sawyers, "Native Plants Under Seige," Garden, March/April 1989

²⁴John E. Schwegman, "Exotic Invaders," Illionois Outdoor Highlights, March 1988

TESTIMONY BEFORE THE U.S. SENATE AGRICULTURE COMMITTEE
AGRICULTURAL RESEARCH AND GENERAL LEGISLATION SUBCOMMITTEE
By: Reeves Petroff, Supervisor
Gallatin County Weed Control District
Bozeman, Montana

The most valuable resource in Montana, and in the West, is native rangelands. These rangelands are used by agriculturalist, recreationalist, private businesses and sportsmen for a variety of uses. A portion of these rangelands have been set aside in pristine condition so that future generations can enjoy their native plants and animals.

However, there is a serious threat to this natural asset. Non-native, noxious weeds have invaded over 6 million acres of Montana's rangeland. Over 3.5 million acres in Idaho. Nine million acres in Oregon. Four million acres in Washington state, and over 250,000 acres in Wyoming.

The only practical solution to this problem is a coordinated and cooperative approach to noxious weed management. Local landowners, federal agencies, state agencies and local governments must work together to at least keep this problem in check.

In Montana I know that weed control is more effective when individuals and agencies work together to solve problems that cross property boundaries. I am proud of what my state has done in the area of noxious weed management. To me the whole definition of management covers both conservation and development. Conservation of our natural resource base and the development of a structure to reach that goal.

Montana has a trust fund designed to assist individuals, counties, local weed control groups, researchers, and educators in their efforts to creatively attack noxious weeds. Because of this trust fund people are talking instead of complaining, agencies are working together, and something is being done. Funding goes directly to on-the-ground projects. Funding for projects is determined by a hearing process. This process ensures that only good quality projects are funded.

In addition, Montana has a Noxious Weed Coordinator in the Montana Department of Agriculture that helps to oversee a coordinated state effort. The Montana Weed Control Association is a very dynamic group of people that includes weed district personnel, federal agencies, and private citizens who get together on a regular basis to compare notes and talk. What has been accomplished in Montana in the area of noxious weed management can be applied to a coordinated approach on lands managed by federal agencies.

Here are some ideas:

1. Consistent and adequate funding for federal land managers.
2. Each federal agency should have at least one person, trained in weed science, to oversee that agency's program.
3. Each of these agency weed coordinators should meet regularly to coordinate projects, exchange ideas and approve local efforts. This advisory group can then meet with their respective state and local entities in order to coordinate noxious weed programs at a local level. Since each agency's situation is different, I believe that one agency cannot adequately oversee an effective program.
4. Minimize red tape, limit meaningless paperwork, and ensure that a large majority of noxious weed funding goes to support localized noxious weed control efforts and not to support an additional upper level bureaucracy.
5. Reduce federal overhead. Funding should go directly from Congress to local field units.
6. Emphasize noxious weed mapping and management planning at the district or local level.
7. Foster relationships and development of cooperative agreements with local citizen's groups as well as state departments of agriculture and local weed districts.
8. Noxious weed listings should originate from each affected state. Each state is in touch with its own unique problems. Each federal agency should then be mandated to comply with this listing and develop cooperative strategies with the appropriate entities.

I cannot emphasize enough the importance of a federal program being directed to local efforts. The framework already exists between many Western states, federal agencies and local citizen's groups concerning noxious weeds. We need to more effectively use that framework and the expertise contained within it. Weed mapping and management planning can best be accomplished by local land managers.

In order to make these local efforts more effective, a source of consistent and adequate noxious weed funding to federal agencies is needed. It is important that federal land managers have this funding to: (1) survey their noxious weeds, (2) develop effective management plans, and (3) to aggressively implement these plans in cooperation with adjacent landowners and local weed districts.

Consider the funding level of Region 1 of the U.S. Forest Service which covers 10 national forests in Montana. This region lost \$110,000 for noxious weed control in 1989. The Bozeman Ranger District had only \$6500 for their whole weed program. Part of their responsibilities includes about 80 acres of leafy spurge. Thirty-five acres were treated in 1989. This treatment alone costs about \$2000. This is only one noxious weed infestation in one district. There are many miles of forest roads that need to be surveyed and treated in order to prevent noxious weeds from spreading to backcountry areas. In 1986, this district had no funding for

noxious weed control.

I applaud the Senate Agriculture Committee's concern for the noxious weed problem. I hope that I can be of some assistance to you as it relates to noxious weeds.

My involvement with noxious weed management includes:

- * B.S. and M.S. in Agriculture from Montana State University
- * Gallatin County Weed Control supervisor since May of 1984
- * Past President of the Montana Weed Control Association
- * Southwestern Area Representative of the Montana Weed Control Association for 3 years
- * Member of the Glacier National Park Noxious Weed Advisory Committee
- * Associate Member of the Gallatin Conservation District

Thank you.

PREPARED STATEMENT OF HON. E. CLAY SHAW, JR., A REPRESENTATIVE IN CONGRESS
FROM THE 15TH CONGRESSIONAL DISTRICT, STATE OF FLORIDA

Mr. Chairman, I am pleased to be able to submit testimony on the subject of revising the Federal Noxious Weed List. Clearly, the time to revise this List is long overdue, and I applaud the efforts of this subcommittee.

In particular, I would like to bring to my colleagues' attention a particular noxious weed that is not on the Federal Noxious Weed List, although it presently infests both the Big Cypress National Preserve and the Loxahatchee National Wildlife Refuge and is poised to attack the Everglades National Park. The weed to which I refer is *Melaleuca* (*Melaleuca quinquenervia*). It is to the detriment of the environment in South Florida that this weed is not listed by the USDA, which has responsibility for the Noxious Weed List.

Previously, the entire Florida delegation joined me in petitioning Agriculture Secretary Clayton Yuetter to list *Melaleuca* as a noxious weed. To our collective disappointment, no positive action has yet been taken on this urgent matter, possibly because certain low-level USDA staffers consider *Melaleuca* a "low-priority" problem, and listing the weed "wouldn't make much difference anyway." Oddly enough, USDA partially funds a *Melaleuca* control program, but at the same time adamantly refuses to add *Melaleuca* to the Noxious Weed List. I invite USDA officials to visit South Florida and view the *Melaleuca* infestation first-hand; I am confident that after seeing the scope of the problem, they would no longer consider this problem "low-priority." In the meantime, I will continue to fight until *Melaleuca* is added to the Federal Noxious Weed List.

In addition to the Florida congressional delegation, the following people, government agencies and organizations have also requested that *Melaleuca* be placed on the Noxious Weed List. They are: Broward County (by unanimous resolution), Dade County (by unanimous resolution), the State of Florida Department of Natural Resources, Governor Bob Martinez of Florida, Friends of the Everglades, the Everglades National Park, and the Exotic Pest Plant Council.

In Florida, *Melaleuca* is considered such a serious environmental problem that the following government agencies have funded projects to control and suppress the weed. They are: the U.S. Department of Agriculture, the U.S. Army Corps of Engineers, the National Park Service, the Everglades National Park, the Florida Department of Natural Resources, the South Florida Water Management District, the Dade County Department of Environmental Resources management, the Florida Department of Community Affairs, the Florida Freshwater Fish and Game Commission, the University of Miami, and the Florida Division of Forestry.

In addition to funding, the following Florida counties and local communities have passed legislation designed to help control the spread of *Melaleuca*. They are: Dade, Martin, Collier, Broward, Lee, Palm Beach, and Charlotte Counties, and the communities of St. Lucie and Hollywood, Florida. These counties and communities all have ordinances that restrict the use of *Melaleuca* or require its removal from natural lands.

Melaleuca was introduced to Florida from Australia in the early 1900's. It was originally brought in as a potential lumber tree, and to help dry up the Everglades, which was then considered a wasteland. Since it was introduced, *Melaleuca* has spread so rapidly throughout South Florida's native Everglades that it has become a serious pest. It now threatens to permanently replace and eliminate our natural plant communities and the animals that live in them. Surveys of *Melaleuca* done in 1980 showed that it had infested over 1.5 million acres of the Everglades, with over 50,000 acres being dense, pure stands of *Melaleuca*. These pure, monospecific forests of *Melaleuca* are often so dense that neither animals nor people can move through them.

Predictions of the spread of *Melaleuca* indicate that over 50 percent of the Everglades wetlands would be infested by the end of the century. In many areas, these infestations are well ahead of predictions. More recent surveys have shown that over 3 million acres have been infested with *Melaleuca*. Intense and extensive wildfires which have recently plagued the Everglades have only helped to increase the spread.

Another serious problem with *Melaleuca* is that *Melaleuca* forests use four to five times more water per acre than do the sawgrass prairies which are usually found before *Melaleuca* takes over. The Everglades provides all of the water that supplies the Biscayne Aquifer, which is the primary water source for South Florida. With an already overburdened water supply, the addition of *Melaleuca* to the water recharge system of the Everglades may further lower our regional water tables, straining these already overused water supplies even more.

In closing, I urge this subcommittee to act and broaden the scope of the Federal Noxious Weed List. If weeds such as *Melaleuca* cannot pass muster to make the List, then the List is obviously deficient. I urge this subcommittee to begin the process of amending the Federal Noxious Weed Act of 1974 (7 U.S.C. 2802) so as to make the Act once again functional.

WYOMING DEPARTMENT OF AGRICULTURE,
Cheyenne, WY, March 8, 1990.

Honorable KENT CONRAD,
U.S. Senate, 361 SDOB, Washington, DC.
Attention: Mr. Dale Buck, Legislative Assistant.

DEAR SENATOR CONRAD: Mr. Ed Maixner, Legislative Assistant to Congressman Dorgan suggested I send you a brief explanation on the difference between Senator Conrad's S. 1200 and Congressman Dorgan's H.R. 4183. Basically the two bills are the same, with some suggested changes in S. 1200, which are as outlined. George Beck, Karen Budd and myself met with Lisa Novacek on July 17, 1989, to discuss these changes in the Senator's Office.

Page 1, lines 4 and 5; This Act may be cited as the "National Undesirable Plant Management Act." The term "Noxious Weed Control Act" is being interpreted as the Federal Noxious Weed Act, which is very misleading if one does not understand P.L. 93-629. By changing the title to National Undesirable Plant Management it eliminates this confusion.

Page 4; Delete the definition of "Exotic Plant," lines 9 through 15. I will explain this in the section on undesirable plant species.

Page 5, line 11; After general land management practices, add *such as manipulation of livestock or wildlife grazing strategies or improving wildlife or livestock habitat*. This addition was at the request of National Cattlemen's Association and Public Land Council.

Page 6; Delete the term Noxious Plant, lines 7 through 15. Again this will be explained in the following section on undesirable plant species.

Page 6, lines 20 through 24 and page 7, lines 1 through 3. It is suggested to redefine the term Undesirable Plant Species to read, *The term "undesirable plants" means plant species that are classified as undesirable, noxious, exotic, injurious, or poisonous, pursuant to State or Federal law. Designation of undesirable plants under this section is limited by the Endangered Species Act, and shall not include plants indigenous to an area where control measures are to be taken under this section.*

The term "undesirable plant species" is an all-inclusive term. Other definitions of undesirable plant species will vary from State to State using various terminology, such as; "undesirable," "noxious," "exotic," "aliens," "non-native," "injurious" or "poisonous." State rights are important and we have to recognize the fact that not all State laws are compatible. The precise definition will also vary according to legal interpretation. In reviewing all the terms that are being used by different States and Federal agencies there is only one that is all inclusive and that is "Undesirable."

Page 7, lines 17 and 18; delete *and on State and private lands adjacent to Federal land*. It appears to us that Federal agencies might have some control over private and State lands.

Page 7, lines 22 through 25 and page 8, lines 1 through 4; delete in its entirety. These are preventive measures that are part of the integrated management system and can be taken into consideration in the Federal, State cooperative agreements. Also Federal agencies already have this authority pursuant to other Federal laws and regulations.

Page 8; Effect on Permit Holders lines 12 through 22, delete in its entirety. Due to misinterpretation it is suggested that this language be removed. This section was removed at the request of the North Dakota Game and Fish Department. NCA and PLC also were concerned with this section.

The proposed National Undesirable Plant Management Act (NUPMA) was not put together overnight. The concept behind NUPMA has received a positive and strong endorsement from a vast majority of the organizations that we have met with, which includes: (1) environmental groups, (2) Federal agencies, (3) several trade associations, (4) Members of Congress, and (5) most important the "grass-root sector" of this country.

We appreciate the work that you and Senator Conrad have completed on S. 1200. If you have any questions please do not hesitate to call me at (307) 777-6585 or 7322.
Sincerely,

GEORGE F. HITTLE,
Weed and Pest Coordinator.

PREPARED STATEMENT OF GEORGE F. HITTLE, WEED AND PEST COORDINATOR,
WYOMING DEPARTMENT OF AGRICULTURE

Mr. Chairman, and members of this subcommittee, I am George F. Hittle, Coordinator, Wyoming Department of Agriculture. This statement is being submitted on behalf of Wyoming Department of Agriculture and Intermountain Noxious Weed Adhoc Committee. There are four elements to consider: (1) Political, (2) legal, (3) scientific, and (4) practical. Comments submitted to this subcommittee are from a practical standpoint.

The Federal Noxious Weed Act (P.L. 93-629) is an extremely important law, particularly to agriculture and our natural ecosystem. It can provide for the prevention, containment and eradication of noxious weeds of foreign origin. One must understand that noxious weeds of foreign origin are a problem that affects many resources, not just agriculture, including: (1) wilderness areas, (2) wildlife habitat, (3) recreational use, (4) aesthetic values of our natural scenery, and (5) further elimination of desirable species of vegetation on Federal, State, and private lands.

It is not realistic for the Federal Government through the Federal Noxious Weed Act, to control long-established noxious weeds of foreign origin. This was not the intent of P.L. 93-629. However, it is practical and desirable to prevent, contain or eradicate new weed species of foreign origin before they become the problems of the future. I do not want to mislead you on the above statement. It is realistic for the Federal Government to prevent, control and/or contain noxious weed through the proposed National Undesirable Plant Management Act (S. 1200) on lands administered by Federal agencies.

The introduction of noxious weeds can be prevented by vigorously enforcing and strengthening the Federal Noxious Weed Act. Individual States should not be expected to use State appropriated funds on noxious weeds of foreign origin that have recently become established through interstate commerce.

The title "Federal Noxious Weed Act" is very misleading if one does not understand this Act. When we discuss the proposed Undesirable Plant Management Act, you will hear the saying, "we already have a Federal Noxious Weed Act, why do we need another Federal law." It is a complete lack of understanding on what the Federal Noxious Weed Act is all about. It is suggested you consider changing the title to "Foreign Noxious Weed Act"; this would eliminate the confusion that exists over the current law. In fact throughout the context of this Act we should be using the term; "Foreign Noxious Weed" and not "Federal Noxious Weed."

In reviewing the proposed amendments to the Federal Noxious Weed Act (P.L. 93-629) we concur with the following proposed amendments:

TITLE I

1. Redefining the term "Noxious Weed." The current definition severely restricts the usefulness of this law. Deleting "not widely prevalent" and adding "natural ecosystem" is an excellent suggestion.

2. Establishment of a Noxious Weed Technical Advisory Group.

3. Authority to prohibit foreign weeds not currently listed as a Federal noxious weed.

4. Interstate movement of Federal noxious weeds. We would like to suggest that you consider rewording this proposed amendment to read: "Federal noxious weeds cannot be transported by any means unless under special permit as authorized by the agency responsible for administering this Act and that the affected State is notified of such shipment."

Let me identify a realistic problem that could and probably has occurred. Say the State of North Carolina classifies a weed as noxious under their State law and that particular weed has not been identified in our region. Through interstate commerce it becomes established in our State, then we have no recourse, all of a sudden it becomes our problem.

5. Classification of noxious weeds. In the classification system we need to implement a quicker response period for newly introduced weed species of foreign origin. These species should receive first priority. Once identified in a State, by the time

you make the request for assistance under the Act, go through the paperwork and obtain the necessary funding, that hummer could be off and running.

6. Regulation of imported agricultural and vegetable seeds under the Federal Noxious Weed Act, if this change is acceptable to the American Seed Trade Association.

Over the years it appears to us that the Federal Noxious Weed Act has always been targeted for self-destruction. Adequate funding is needed to carry out the intent of P.L. 93-629. Without the necessary funds you can add on all the amendments you want and what do we really have, have we improved the effectiveness of this Act? What we need is a permanent source of funding to finance this important law.

TITLE II

Mr. Chairman, we do not concur with title II "Weed Control on land enrolled in the Conservation Reserve Program." Amendments that relate to the Conservation Reserve Program should come under the Food Security Act of 1985 as amended (P.L. 99-198) and not the Federal Noxious Weed Act. We are not opposed to your language in title II, but firmly believe it does not belong as part of the Federal Noxious Weed Act.

Department of Agriculture rules and regulations sets forth the terms and conditions of the Conservation Reserve Program authorized by P.L. 99-198, which states in part:

1. "The Extension Service shall coordinate the related information and education program concerning implementation of the CRP."

Weed Control Technical Guides are already available in many of the States and are usually updated annually by the State's University Cooperative Extension Service.

2. The participant shall "comply with the noxious weed laws of the applicable State on land subject to the CRP Contract."

The situation here is not a Federal problem, but a State problem. Some States do not have adequate statewide noxious weed laws and other States have no such law in place.

One of the biggest problems we have with land enrolled in the Conservation Reserve Program is common weeds such as Kochia and Russian Thistle. These two annual weeds have become a public nuisance. Annual weeds have caused severe damage to fences, destruction of private property, created fire hazards, etc. It has also placed an extra burden on highway departments who are forced to clean up the mess because of the hazard to highway safety. This problem can be corrected by adding a clause to the CRP contract that pertains to common weeds in general on conservation reserve land. This clause can be added to the contract by the Administrator of ASCS or ASCS State Director.

Several areas of concern have been identified in the CRP: (1) rules and regulations adopted need flexibility to meet local conditions, (2) national guidelines need to be established to meet existing conditions and soil criteria, (3) participants are not complying with certain terms outlined in the contract and (4) contracts are not being monitored close enough in some areas. If the CRP Contracts were being enforced correctly, the proposed amendments outlined in title II may not be necessary.

S. 1159 AND S. 1200

The Senate bill proposed by Senator Baucus, which in essence combines S. 1159 and S. 1200 into one bill is impractical. Once again comments to this subcommittee are from a practical standpoint. In reviewing S. 1159 and S. 1200, we have two separate issues at stake, trying to combine them into one bill is creating a bureaucratic nightmare and an attorney's dream. Senate bill 1159 should not come under the Federal Noxious Weed Act (P.L. 93-629).

The concept of a Center for Noxious Weed Management and Data Collection has some merit. However, can we really afford such a Center at this point in time? Where will the agencies give up priorities to come up with \$100 million per year over the next 4 years? What will happen to the Center after 1994 with no more funding being authorized? If such a Center is established it should be within the Agricultural Research Service (ARS) and not under the jurisdiction of Animal and Plant Health Inspection Service (APHIS).

Senate bill 1159 has many issues of great concern to us; these issues will be addressed in a statement submitted by Dr. K. George Beck, Chairman, Intermountain Noxious Weed Adhoc Committee (INWAC). However there are three issues I would like to point out: (1) Federal funds should not be used for cost sharing on State and

private lands pursuant to S. 1159, (2) the Federal Government should provide funds under P.L. 93-629 to the States on newly introduced weed species that become established through interstate commerce on Federal, State or private land and (3) it is up to each State and the private sector to implement and finance the program on private and State lands pursuant to S. 1200.

Senate bill 1200 addresses many of these issues that are of concern to us and of concern to Federal agencies. We believe that the proposed National Undesirable Plant Management Act (NUPMA) offers an environmentally sound and practical solution to the serious problems caused from the contamination of undesirable plant species. The purpose of this proposed Act is to implement a comprehensive program that will prevent, contain and/or control undesirable plant species on Federal lands. This program also utilizes an integrated management system (IMS).

Decisions regarding the IMS consider the most efficient and effective methods, based on scientific evidence, current technology, plant physiology and habitat, ensuring that decisions are made using an interdisciplinary approach to managing undesirable plants. The interdisciplinary approach includes participation by personnel with experience in weed science, range science, environmental issues, wildlife biology, land management, and forestry.

All decisions made will include consideration of the economic, social and ecological consequence of implementing this program. The objective is to achieve the optimum management desired with the least possible environmental damage. No one method will be used alone in the IMS.

The undesirable plant management program would be implemented in cooperation with similar programs carried out on State and private lands. The system selected will have to be acceptable to Federal, State and local governments and would be spelled out in the cooperative agreements.

The proposed National Undesirable Plant Management Act (NUPMA) (S. 1200) was not put together overnight. The concept behind NUPMA has received a positive and strong endorsement from a vast majority of the organizations that we have met with, which includes: (1) several trade associations, (2) environmental groups, (3) Federal agencies, (4) Members of Congress, and (5) most important the "grass-root sector" of this country in drafting NUPMA. INWAC members are to be congratulated for their foresight, initiative, dedication and hard work over the past few years in preparing this draft.

Mr. Chairman, members of this subcommittee, I appreciate the opportunity to submit these comments.

ILLINOIS DEPARTMENT OF CONSERVATION,
Lincoln Tower Plaza, Springfield, IL, March 5, 1990.

Senator THOMAS DASCHLE,
U.S. Senate, 317 Hart Senate Office Building, Washington, DC.

DEAR SENATOR DASCHLE: I am writing to provide Illinois' input into your hearing scheduled for March 9 into noxious weed control needs at the Federal level.

Attached is our position statement on this issue as prepared by John Schwegman of my staff. John cochaired a national conference session on this issue at the annual meeting of the Natural Areas Association this past October. He is well versed in the need for exotic weed control and authored our State law on the subject.

I want to point out that Illinois is receiving good cooperation from the U.S. Soil Conservation Service plant materials program in regard to developing native plants for conservation plantings. However, we still believe our recommendations regarding that and other introduction programs are needed.

Thank you for your consideration of these proposals.

Sincerely,

JOHN TRANQUILLI,
Director, Office of Resource Management.

[Position statement follows:]

THE NEED FOR FEDERAL ACTION TO CONTROL WEEDS OF NATURAL LANDS

(By John Schwegman, Botany Program Manager, Illinois Department of Conservation, March 2, 1990)

Illinois natural areas and wildlands suffer from severe infestations of introduced exotic weeds. These weeds threaten the beauty, natural diversity, and habitat qual-

ity of these lands and therefore pose a major threat to Illinois' natural heritage. State, local and Federal agencies and private organizations spend tens of thousands of dollars annually in control efforts on nature preserves, parks and conservation areas in the State.

In spite of this effort, five nature preserves representing a public investment of over \$1 million have been totally overrun by weeds and are beyond known treatment. Many other preserves have severe infestations that defy eradication. Here, the managers are working to contain the problem until research finds an answer. Most forests and wildlands in Illinois are privately owned and go unmanaged as far as maintaining their natural quality is concerned. On this, our basic wildlife habitat support base, exotic weeds are beginning to convert significant areas of naturally diverse habitat into monocultures of alien weeds. The impact of these weeds on wildlife has not been researched, but the loss in beauty as our woodland wildflowers are replaced by weeds is obvious.

These weed problems are not unique to Illinois but cross State boundaries into our adjacent States. The problem weeds in the Midwest are somewhat different than other regions of the United States, but each region has its own suite of exotic weeds. Illinois' most serious weeds at present are purple loosestrife (*Lythrum salicaria*) of wetlands and garlic mustard (*Alliaria petiolata*) in deciduous forests. Amur honeysuckle (*Lonicera mackii*), autumn olive (*Elaeagnus umbellata*), multiflora rose (*Rosa multiflora*) and Japanese honeysuckle (*Lonicera japonica*) are very severe problems as well. The latter two species along with purple loosestrife are illegal to sell or plant in Illinois under our State exotic weed act.

The Federal Government has a responsibility for this problem because several of the most serious problem weeds in the Midwest were imported and promoted by a Federal agency, the U.S. Soil Conservation Service, because the States have no authority or ability to restrict importation and distribution of noxious and potentially noxious weeds into the United States and because the Nation's only existing program to address development of biological controls of weeds is housed in the U.S. Department of Agriculture.

A Federal program to address this national conservation problem should include the following elements:

REGULATION OF NEW PLANT INTRODUCTIONS

No amount of effort to control the existing noxious weeds of wildlands will be meaningful if control is not instituted over the continuing introduction of new weeds. The U.S. Department of Agriculture's Plant Introduction Service and the Soil Conservation Service's Plant Materials Program and all other private and public plant introduction efforts should be required by law to evaluate weed potential of non-native plants they are considering for introduction. Plants which prove to have significant weed potential in parts of the United States should be prohibited by law from importation, sale and planting in all of, or the relevant portions of, the United States.

REGULATION OF INTERSTATE MOVEMENT OF DESIGNATED NOXIOUS WEEDS

Weeds of wildlands should qualify, along with agricultural weeds, as noxious weeds under a Federal act designed to stop the interstate spread of noxious weeds. Such an act should allow for administrative listing of noxious weeds to provide the flexibility necessary to react in a timely manner to new outbreaks. It should allow some mechanism for input from the conservation community, especially natural area managers. The National Park Service, the Natural Areas Association, the Nature Conservancy, the Natural Resources Defense Council and various States have such expertise. Listed noxious weeds should be prohibited from interstate commerce and personal transportation into areas of the country where they are suspected to have weed potential. The importation into the country to such areas from outside of the United States should also be prohibited. The selling, planting, discarding and promoting of noxious weeds should be a Federal offense in parts of the United States where they have weed potential.

FUNDING OF BIOLOGICAL CONTROL OF WILDLAND WEEDS

A program is needed at the Federal level to fund biological control research and development for the most serious weeds of natural lands. This research involves carefully introducing insects and plant diseases that control these exotic weeds in their native land into their range in the United States. Since these problems regularly cross State boundaries and the cost of such research exceeds the ability of any

one State to fund them, a Federal program is required to meet this national need. A typical project costs about \$1 million over about 9 years, but past experience with alligator weed, water hyacinth and Klamath weed biocontrol indicate a tremendous benefit over costs for such research. For our most serious wildland weeds here in Illinois, biological control is our only hope because of the scope of the infestations.

The U.S. Department of Agriculture currently has programs in biological control of agricultural weeds. This program is addressing some wildland weed problems, primarily range weeds of Midwestern prairies because of their agricultural importance. The nonagricultural wildland weed project currently under way by them demonstrate the problem rather than indicating that the current program is beginning to address this problem. In spite of the fact that purple loosestrife is destroying critical waterfowl (game) habitat on a continent wide basis, It took a decade of efforts to get the the project funded. There is no dependable source of Federal funding for problems unrelated to game species and funding for game problems is unreliable.

A national program is needed. This program (fund) should probably be regulated, if not administered, by the Department of Interior as opposed to Agriculture. A strong mechanism for meeting the needs of the States is imperative. While the needs of the National Parks reflect some of the States needs, many of the States problems are not major problems within the parks. Those States wishing input into priorities for the program should have that opportunity along with other agencies of government and private organizations and individuals.

The funding level would depend on a national survey of needs, but a \$1 million appropriation in fiscal year 1991 would probably initiate a dozen or more of the most critical research projects. An effective program would depend on continuing funding in subsequent years. Illinois urges that garlic mustard and Amur honeysuckle be in any initial group.

RESEARCH FUNDS FOR CONTROL ON MANAGED AREAS

The protection and management of land for its natural heritage values is a rapidly growing activity in nearly all States. However, funding for research into controlling exotic weeds and other problems on nature reserves is very limited in the States. At present, Federal funds can be obtained to study and determine proper management of single endangered species, while no funds are available to study control of a weed that is overrunning an entire natural community and threatens to make all of its species endangered! A program of Federal funding, available to the State management agencies, is needed. The recent initiative of biodiversity research funds by the National Science Foundation is not adequate because these funds are granted to researchers who seldom address practical management problems. The funds need to go to managers who can then contract for the research they need.

PREPARED STATEMENT OF K. GEORGE BECK, PH.D., DEPARTMENT OF PLANT PATHOLOGY AND WEED SCIENCE, COLORADO STATE UNIVERSITY, WEED SCIENTIST AND CHAIRMAN, INTERMOUNTAIN NOXIOUS WEED ADHOC COMMITTEE

Honorable members, I am Dr. George Beck, a weed scientist at Colorado State University and Chairman of the Intermountain Noxious Weed Adhoc Committee (INWAC). Please accept my written statement concerning an issue that is much more important than some realize, i.e., the need for national legislation concerning undesirable plant management on Federal land.

Many people fully recognize that undesirable plants, or weeds, are contaminating Federal land and displacing desirable, native vegetation. Weeds cause a variety of problems including causing agricultural losses of at least \$18 billion annually in decreased crop, livestock, forest, and aquatic production; contributing to water, land, and air pollution; causing human health problems; and displacing wildlife. Additionally, weeds on Federal land serve as a contamination source for State and private lands. Unless weeds are effectively managed, their populations will continue to increase and further negatively impact our Nation's environment and economy.

S. 2277 is a combination of S. 1159 and S. 1200, and apparently is being considered for inclusion in the "Federal Noxious Weed Act Amendments of 1990" that are being discussed today. S. 2277 attempts to contend with our national noxious weed problem. This combined bill, S. 2277, contains intolerable and desirable sections.

The proposed Center for Noxious Weed Management and Data Collection is a concept with admirable qualities. However, this Center must be separated from a national undesirable plant management concept. These two concepts have a common goal, but possess divergent pathways to achieve that goal.

INWAC worked for 2.5 years writing the National Undesirable Plant Management Act (NUPMA) and Senators and Representatives from the six member States (Montana, North Dakota, Idaho, Colorado, Wyoming, and Utah) reviewed the proposal several times. Many parts of NUPMA can be found intermingled within S. 2277. NUPMA, as written by INWAC, provides sound guidelines for Federal agencies to manage noxious weeds on Federal land in cooperation with affected States. NUPMA should be invoked on its own merit.

A Center for noxious weed management research is a good thought, as previously mentioned, but must be separated from implementing noxious weed management by Federal and State agencies and private individuals. Without question, such a Center is in need of a responsible or lead agency—logically, the U.S. Department of Agriculture (USDA). However, the Agricultural Research Service (ARS) is the research branch of the USDA and should assume the lead role in the proposed Center's operation, not the Animal and Plant Health Inspection Service (APHIS).

ARS has considerable research expertise and has many scientists with weed research in progress. ARS has interdisciplinary teams of weed scientists, plant physiologists, plant pathologists, entomologists, and economists collaborating to advance our knowledge in weed biology, weed ecology, and developing effective, integrated weed management systems. Development of the proposed weed research Center logically should come under the jurisdiction of ARS. Any additional funds made available simply would augment their research efforts—they would not have to start from scratch.

The State land-grant universities could easily cooperate with this Center on joint research projects. Cooperative Extension at these universities would logically transmit the new technology, generated by the enhanced research effort, to Federal and State agencies and private individuals, as originally intended in the formation of the land-grant university system.

Additionally, some of the responsibilities issued to the proposed Center are inappropriate to achieve its true objective. Burdening such a Center with overseeing the implementation of weed management on Federal or any other land, would dramatically impede weed research progress. This Center only should be involved with discovering new technologies to develop effective integrated weed management systems, not in mapping weed infestations. Each Federal agency should be responsible for mapping weed infestations on land they administer. Burdening the proposed weed research Center with mapping duties will impede research progress and slow transfer of vital mapping data to Federal agencies that are ultimately responsible for weed management.

Logically, NUPMA must be kept separate from the proposed weed research Center to streamline the operation of both concepts and make effective use of limited Federal funds. A Federal lead agency responsible for NUPMA's operation is a poor idea at best. Each Federal agency has a different philosophy on intended land use. Each Federal agency must be allowed to manage undesirable plants on land they administer, and not answer to a lead agency. This would ensure that intended land use can be successfully achieved, thus, avoiding conflict and loss of effectiveness. Integrated weed management is the systematic approach to minimize weed impacts and optimize intended land use. The diverse nature of intended land use within the Federal system necessitates that each Federal agency operate autonomously, and this includes undesirable plant management.

Therefore, it is only logical from a scientific and practical view that the S. 1159 and S. 1200 components of S. 2277 be considered as separate issues to achieve a common goal and they must be physically separated as two distinct bills before Congress. Keeping S. 1159 and S. 1200 combined as one bill will create a bureaucratic logjam that would dramatically impede research by the proposed Center and slow desperately needed implementation of undesirable plant management by Federal agencies on Federal land.

I respectfully request that you include this testimony as part of the written record concerning the hearing on the Federal Noxious Weed Act before the Subcommittee on Agricultural Research and General Legislation of the Senate Committee on Agriculture, Nutrition, and Forestry, March 28, 1990.